

FLORA OF DELAWARE

AND THE

EASTERN SHORE

ROBERT R. TATNALL



HAY AND ED MOUL



E. J. Moul

and now back to Edwin
T. Moul, who started my
interest and love of the
birds and the out-of-doors.

M. Dorothy Schwartz
Jan 1971

George M. Gray Museum
Marine Biological Laboratory
Woods Hole, Massachusetts 02543

FLORA OF DELAWARE AND THE EASTERN SHORE



OUTLINE MAP OF THE PENINSULA OF DELAWARE, MARYLAND AND VIRGINIA

Showing the state and county boundaries, with the names of the counties. The stippled band represents the Fall Line. Places referred to in the text may usually be found on the Topographic Map of the United States, published by the U. S. Geological Survey, to the scale of about one inch to the mile. The sheets of this map are now available for the entire Peninsula.

471
152
.723

FLORA OF DELAWARE

AND THE

EASTERN SHORE

An Annotated List of the Ferns and Flowering
Plants of the Peninsula of Delaware,
Maryland and Virginia

BY
ROBERT R. TATNALL



PUBLISHED BY
THE SOCIETY OF NATURAL HISTORY OF DELAWARE
1946

PRINTED IN THE UNITED STATES OF AMERICA
BY THE INTELLIGENCER PRINTING COMPANY
LANCASTER, PA.

TABLE OF CONTENTS

	PAGE
OUTLINE MAP OF THE PENINSULA	<i>Frontispiece</i>
INTRODUCTION	ix
Phytogeographic Regions or Provinces	ix
The Piedmont Plateau	x
The Coastal Plain	xi
Transition Zone	xiii
Early and Later Collectors of Peninsula Plants	xiv
Early Botanical Societies in Wilmington	xv
Later Wilmington Botanists	xvii
The Annotated List	xix
The Card Catalog	xx
Distribution of Plant Species on the Peninsula	xxi
Nomenclature and Arrangement	xxi
Acknowledgments	xxii
Symbols and Abbreviations	xxiii
Collectors Cited in the Text	xxiv
ANNOTATED LIST OF FERNS AND FLOWERING PLANTS	1
SYNOPSIS OF ORDERS, FAMILIES AND GENERA	285
BIBLIOGRAPHY	289
INDEX OF SCIENTIFIC AND COMMON NAMES OF PLANTS	291

LIST OF ILLUSTRATIONS

(Photographs by Frank Morton Jones.)

	FACING PAGE
EASTERN HEMLOCK, (<i>Tsuga canadensis</i>)	11
BALD CYPRESS, (<i>Taxodium distichum</i>)	12
SWAMP PINK, (<i>Helonias bullata</i>)	81
GREAT WHITE TRILLIUM, (<i>Trillium grandiflorum</i>)	85
CANBY'S ORCHIS, (<i>Habenaria Canbyi</i>)	90
ALDERS, (<i>Alnus serrulata</i> and <i>A. maritima</i>)	99
FEATHERFOIL, (<i>Hottonia inflata</i>)	202
SWEET LEAF, (<i>Symplocos tinctoria</i>)	204
CROSS-VINE, (<i>Bignonia capreolata</i>)	240

INTRODUCTION

In the Preface to Edward Tatnall's Catalogue of plants of New Castle County, published in 1860, the author quotes the belief of Dr. William Darlington, that "New Castle County possesses a richer flora than any other county in the Union." While this opinion, expressed more than eighty years ago, is hardly tenable in the light of present-day knowledge, yet it is true that the Peninsula of Delaware, Maryland and Virginia, of which New Castle County is a part, is a natural geographic unit of exceptional interest botanically, with a flora exceeding in variety most areas of like extent in the eastern United States. This peninsula includes in its northern portion a strip of upland, with rocky, wooded hillsides, and rich alluvial soil of stream valleys. Farther south it presents a variety of plant habitats characteristic of the coastal lowlands.

The Peninsula of Delaware, Maryland and Virginia, as here defined, is the region lying south of the southern boundary of Pennsylvania, and bounded on the east by the Delaware River and Bay and the Atlantic Ocean, and on the west by the Susquehanna River and Chesapeake Bay. It thus includes the entire state of Delaware, nine counties of Maryland (or about one-third of the land area of that state), and two counties of Virginia. Its length, north to south, is roughly 200 miles, and its greatest width 70 miles. Its total land area is about 6057 square miles.

Phytogeographic Regions or Provinces. Two very distinct natural "provinces" are involved in the make-up of the Peninsula, namely, the Coastal Plain and the Piedmont Plateau. Each of these has a characteristic flora, differing in many interesting respects from the other.

The Coastal Plain of the Atlantic states is a low-lying strip of land along the seacoast. which in recent geological time has been a portion of the ocean floor. Its inner or landward limit is the line marking the farthest encroachment of the sea during the periods of submergence. Beyond the inner margin of the Coastal Plain the ground rises somewhat abruptly to a height of several hundred feet above sea-level, forming an area of more or less uniform altitude, extending inward toward the mountains. This is the Piedmont Plateau. As the name implies, it may be regarded as a foot-hill

Flora of Delaware and the Eastern Shore

region of the Alleghenies. In the following pages it will usually be referred to as "the Piedmont."

The boundary between the Piedmont and the Coastal Plain is known as the "Fall Line." This term is somewhat vague, since frequently the "line" becomes a band or zone, from two to four miles wide in our area, across which the streams descend rather rapidly from the quiet levels of the Piedmont meadows to sea-level, and within which abundant water-power is available. Thus, in the valley of Brandywine Creek, between Rockland and tidewater, an airline distance of about four miles, the total fall is 140 feet, while in the three miles of the same stream, from the Pennsylvania line down to Rockland, the fall is only about twenty feet.

The term "Fall Line" is here used in its narrow sense, to mean the inner boundary of the Coastal Plain; that is, the line at which the streams approximately reach the tidewater level. This line cuts across the northern part of our Peninsula from near the mouth of the Susquehanna River to the city of Wilmington, thence following a course roughly parallel to the Delaware River, and within a mile or two of its shore, and crosses the state line near Claymont. It follows rather closely the right-of-way of the Baltimore and Ohio Railroad through Cecil and New Castle Counties. Thus the Peninsula is divided into two provinces of very unequal size, with about 250 square miles, north of the Fall Line, referable to the Piedmont, and 5800 square miles south of that line, to the Coastal Plain.*

The Piedmont Plateau. North of the Fall Line the land rises progressively, in Delaware reaching a height of about 440 feet at Centreville, and again along the state line about three miles east of Brandywine Creek. The highest point on the Peninsula is near Rock Springs in northwestern Cecil County, where an altitude of 540 feet is reached.

The relatively narrow strip of Piedmont occupying the part of our territory north of the Fall Line presents a flora almost identical with that of the adjoining parts of Pennsylvania. The steep and often rocky hillsides and the rich alluvial soil of the stream-valleys

* For detailed information regarding the Coastal Plain, the Piedmont Plateau and the Fall Line, see Fenneman: "Physiography of Eastern United States" (McGraw-Hill, 1938), especially the first two chapters, and the maps on Plates I to III.

Introduction

support a flora of great variety and richness, including many species rare or non-existent on the Coastal Plain.

The surface of this upland region is largely composed of rocks which are among the most ancient in the United States. They belong to the Pre-Cambrian age, and contain no fossils. Among them are extensive areas of schists, diorites and gabbro, the last locally known as "Brandwine granite." They yield predominantly acid soils. Serpentine rock, with its characteristic flora, appears in Delaware as a single outcrop, about $\frac{3}{4}$ by $1\frac{1}{2}$ miles in extent, situated east and northeast of Mount Cuba. There are several much more extensive outcrops of serpentine along the northern and northwestern borders of Cecil County, Maryland. Limestone appears to reach the surface in but one locality in Delaware, namely at the Eastburn quarries along Pike Creek, east of Pleasant Hill. However, this region seems to be lacking in lime-loving plants.

The Coastal Plain. South of the Fall Line the present surface of the land, in general, has an altitude only slightly above sea-level. If the level of the ocean should rise as much as fifty feet, most of the Peninsula south of Cecil and New Castle Counties would be reduced to an archipelago of small low islands, and the two Virginia counties would be entirely submerged. A rise of 100 feet would obliterate all but the northern extremity of the peninsular Coastal Plain.

The oldest formations which appear on the Coastal Plain of the Peninsula belong to the Lower Cretaceous, and occur chiefly on Elk Neck, in the region lying north and west of Charlestown, and in the drainage areas of the Elk River and Christiana Creek.

The soil of our portion of the Coastal Plain consists for the most part of sands, loams and gravels, of marine deposition during early Pleistocene times. These soils are underlain by much older formations, which are exposed along stream valleys in the northern half of the Peninsula. In the material dredged from the bed of the Chesapeake and Delaware Canal, fossil remains of belemnites and giant clams belonging to Upper Cretaceous times, occur in abundance, especially along the recently excavated Reedy Point channel. Elsewhere, fossil wood (lignite) abounds in the excavated material. "Greensand marls," also of Cretaceous age, are exposed in many stream valleys, and are conspicuously in evidence on the slope of the deep cut of the canal, just east of Summit Bridge.

The recent geological history of the Peninsula is one of gradual

submergence, and this subsidence, which still continues, has resulted in the formation of a coastline of the "drowned" type. This is especially in evidence on the Chesapeake Bay side, where the shore line is irregular, and is dissected into numerous islands.* The river estuaries are wide, and extend far into the land, providing extensive areas of tidal shore, whose salinity varies from salt to brackish and finally fresh water, as one goes from the mouth of the stream to the head of tide. This furnishes suitable habitats for differing requirements as to salt.

Farther upstream fresh-water river swamps are abundant, with a flora of their own. On higher levels, swamps dominated by "white cedar" (*Chamaecyparis*), and others by "bald cypress" (*Taxodium*) are found, and there are wide areas of pine-barren, both dry and moist. From Talbot and Sussex Counties southward one sees many pure stands of Loblolly Pine (*Pinus Taeda*) and others of Scrub Pine (*P. virginiana*), and these open woodlands are always interesting to the botanical collector, since various species of plants not elsewhere found are to be expected on their floors. Sphagnous bogs in many places harbor acid-loving rarities.

Along the coast, especially on the Atlantic side, are many square miles of salt marsh, often inaccessible except by boat, and on the ocean front are long stretches of white-sand beach, with accompanying dunes, salt meadows, and tide-washed salt flats.

Nearly all of the fresh-water ponds on the Peninsula are artificial, that is, mill-ponds, many of them botanically interesting. Among the few natural ponds, perhaps the most noteworthy from a botanical point of view are the Custis Ponds, a group of about five small pools among high wooded dunes on the property of Mr. Rufus P. Custis, on Savage Neck,† southwest of Eastville, Virginia. These are fed by rain-water, and perhaps also by sub-surface springs, and are semi-permanent. Here is the only station on the Peninsula, as far as is known, for *Wolffia punctata*, the smallest known flowering plant, and one of the two known localities in our area for *Wolffiella floridana*, which also occurs in Dragon Marsh, near Delaware City.

Sea-level ponds are formed at points along the coast, especially that of Chesapeake Bay, in places where wave-action has thrown

* A detailed account of the geological history of our area may be obtained from the *Geological Atlas of the United States*, especially the Coatesville-West Chester, Elkton-Wilmington, Tolchester, Dover, and Choptank quadrangles.

† Name sometimes given as "Savage's Neck," from Thomas Savage, who came to Virginia with Captain John Smith, and who was the first white settler on the Eastern Shore.

Introduction

sand bars across the mouths of small streams, thus forming natural dams which partially or completely impound the water. These "relic ponds" may be either brackish or fresh. Several of them are shown on the Betterton and Chestertown sheets of the Geological Survey maps.

Behind the coastal dunes the so-called "dune hollows" are a characteristic feature. These are shallow depressions in the sand, kept more or less moist by rain water, which usually sinks out of sight as it falls. They furnish interesting plant habitats.

Transition Zone. On the Peninsula a number of northern plant species reach their southern limits of natural distribution, at least as far as the coastal region is concerned, while a still greater number of species characteristic of the South extend no farther northward than our area. Thus, the southernmost Coastal Plain stations for Hemlock (*Tsuga canadensis*) are on the Peninsula, while two maritime plants of the North, *Glaux maritima* and *Arenaria peploides* var. *robusta*, are to be found on our shores, the latter also at Cape Henry. The large white Trillium (*T. grandiflorum*), rare on the Coastal Plain, is found in astonishing abundance at two stations in Cecil County, Maryland. According to J. K. Small (in "Peninsula Delmarva") the Peninsula is also the southern Coastal Plain limit for *Gaultheria procumbens* and *Lycopodium lucidulum*.

A few characteristically southern species have barely gained foothold on the southern tip of the Peninsula, where they are limited to the southern half of Northampton County, Virginia. Among these are the minute floating aquatic *Wolffia punctata*, as well as *Carex arenaria*, *Tillandsia usneoides* (Spanish Moss), *Quercus virginiana* (the Live Oak, which, as we have it, has more the stature of a shrub than that of a tree), *Teesdalia nudicaulis*, and *Ilex vomitoria*.

Other species, extending somewhat farther north but limited to the two Virginia counties, are *Baptisia alba* and *B. pinetorum*, which occur locally in central Accomac County, *Zanthoxylum Clava-Herculis* (the Toothache Tree), *Berchemia scandens* (Supple Jack), and *Borrichia frutescens* (Sea Ox-eye), the last three reaching their northern limit at Chincotaegue Island. Of southern trees, the Sweet Leaf (*Symplocos tinctoria*) and Bald Cypress (*Taxodium distichum*) are not known to occur north of lower Sussex County, except that the latter has one station in Cape May County, New Jersey. The Muscadine Grape (*Vitis rotundifolia*) reaches its

Flora of Delaware and the Eastern Shore

northern limit near Millsboro, Sussex County, Delaware, and the Cross-vine (*Bignonia capreolata*) has not been found north of Worcester County, Maryland.

One plant is especially noteworthy, as being an endemic on our Peninsula. This is the Seaside Alder (*Alnus maritima*), which is abundant, not at the seaside, but farther inland, on margins of ponds and streams in Sussex County, Delaware, and the adjoining counties of Maryland. Elsewhere, it has been recorded only from southern Oklahoma, where, according to J. K. Small, "it has been collected once, long ago." Its identity there is doubtful.

Dr. John K. Small, in "Peninsula Delmarva," says: "Floristic phenomena are abundant in Delmarva. However, in that land of intermediate position between the North and the South, the plentiful thickets of the evergreen calico-bush (*Kalmia latifolia*), on the one hand, reminded one of the mountains, while, on the other, the cypress-swamps occupied by the deciduous-leaved *Taxodium distichum* were much more reminiscent of Florida."

In view of the variety of habitats which results here from the presence of territory belonging to both Piedmont and Coastal Plain, including marine as well as inland influence, and from the existence on the Peninsula of a north-south transition zone, we should reasonably expect a rich and varied flora, with a wealth of species out of proportion to the area. That this may be the case is indicated by the fact that the number of species and varieties recorded in this Annotated List is about 2200, in an area of somewhat more than 6000 square miles.

The number reported in the Tatnall Catalogue of 1860, for New Castle County, is 1106, the area covered being 437 square miles. It is surprising that no catalog of the plants of Delaware and the Eastern Shore* has hitherto been published. A number of regional lists covering portions of the Peninsula have been issued from time to time. Most of these are listed in the *Bibliography* on page 289.

Early and Later Collectors of Plants of the Peninsula. In the eighteenth and early nineteenth centuries Philadelphia was the center of scientific activity in this country. However, of the many botanists who resided in the Philadelphia local area, or who came from abroad and sojourned here for longer or shorter periods, only

* Since early colonial times, the term "Eastern Shore" has been applied locally to the portions of Maryland and Virginia bordering the eastern shore of Chesapeake Bay.

Introduction

a few left evidence, in the form of dried specimens, of having contributed to the knowledge of the flora of our Peninsula.

Dr. William Baldwin* (1779–1819), a native of Chester County, Pa., settled about 1807 in Wilmington, Del., where he practiced medicine, with botany as an avocation. The year 1811 finds him in correspondence with Muhlenberg, to whom he sent more than 500 of the local plants, as evidenced by the correspondence preserved by Dr. Darlington, in his "*Reliquiae Baldwinianae*" (1843). These specimens are now at the Academy of Natural Sciences of Philadelphia, where they are included in the Muhlenberg herbarium. (See Pennell, l. c.)

Thomas Nuttall (1786–1859), arrived in Philadelphia from England in 1807 or 1808. Then a youth of 21 or 22 years, he immediately entered upon botanical studies, which were later to take him across the breadth of the continent and as far west as Hawaii, and were to make him one of the best-informed of our early botanists. One of his earliest collecting trips is of especial interest to us, namely, his visit in the summer of 1809 to "the mountainous part of Delaware, Sussex County."† A packet of fragmentary specimens representing 43 species, collected on this expedition and sent to Benjamin Smith Barton, sponsor of the trip, is preserved at the Academy of Natural Sciences.

The eccentric French naturalist, C. S. Rafinesque (1783–1840), spent many years of the first half of the nineteenth century in this country. He writes: "I came to North America in 1802, and travelled chiefly on foot until 1804, over New Jersey, Pennsylvania, Delaware, Maryland and Virginia, . . .". In 1804 he prepared for publication "*Florula Delawarica, or a Catalogue of the Plants Found in the State of Delaware.*" However, this work was never published, and the manuscript is lost. After Rafinesque's death his herbarium became widely scattered, so that there is small chance of locating the specimens from our state.

Early Botanical Societies in Wilmington. Considerable historic interest centers in the formation, a century ago, of two societies for the study of the flora of the Wilmington area. From the minute book of The Botanical Society of Wilmington we learn that "A preliminary meeting was held 5th-day, the 5th of First Month, 1843, at

* See Pennell: *Botanical Collectors of the Philadelphia Area*, in *Bartonia* 21, 466 sqq. (1942).

† See *Bartonia*, No. 20, 1. 1940.

Flora of Delaware and the Eastern Shore

the home of Dr. Henry Gibbons; adjourned to meet 5th-day, the 12th, at Delaware Academy of Natural Sciences." The minutes were signed by

Dr. William Gibbons	Samuel Hilles
Eli Hilles	William Hogarth
Abraham Alderdice	Norris Palmer
Ziba Ferris	Edward Tatnall, Jr.
Edward Tatnall	Albert W. Smith

Dr. Henry Gibbons.

Originally, the admission fee was 50 cents; the monthly dues, 12½ cents. Dr. William Darlington was elected an honorary member.

The Society issued a

CATALOGUE
of the
PHAENOGAMOUS AND FILICOID PLANTS
of
NEW CASTLE COUNTY

Arranged according to the Natural System
with the Synonyms of Modern Authors

Published by
The Botanical Society of Wilmington, Del.
1844

This work was 12 pages long, with three columns to a page, and listed 739 species and 20 varieties. "Addenda" to the Catalogue, consisting of a single sheet, or two pages, was published in 1846, and contained the names of 129 species and 7 varieties. A copy of the Catalogue, and one of the Addenda, are preserved in the archives of the Society of Natural History of Delaware, deposited in the Institute Free Library. They are bare lists of names, without annotations.

The last meeting of the Botanical Society of Wilmington was held October 1, 1859, when it merged with the Wilmington Institute, turning over its assets to the Institute. Its herbarium was presented to Edward Tatnall and Dubré Knight. The Society's books are now in the custody of Wilmington Institute Free Library.

At first, women were not admitted to membership in the Botanical Society of Wilmington. As a result of this somewhat ungallant

Introduction

discrimination the Ladies' Botanical Society was organized. This survived until 1849, when the Botanical Society of Wilmington belatedly threw open its membership to the ladies, who, perhaps as a salve to former injuries, were exempted from payment of dues! The Ladies' Society showed no lack of enthusiasm for scientific endeavor. It was addressed, at least on one occasion, by Dr. William Darlington. A number of specimens from the collection of one of the members, Hannah W. Richardson, which she gathered and beautifully pressed a century ago, are now in the herbarium of the writer, her great-nephew.

Later Wilmington Botanists. Our present knowledge of the flora of the Peninsula is due in large measure to the labors of three veteran Wilmington botanists of the last century—Edward Tatnall, Albert Commons and William M. Canby.

Edward Tatnall (1818–1898) is believed to have taken part in the preparation of the twelve-page "Catalogue" above mentioned. A later and much more pretentious catalog, prepared by Edward Tatnall, and bearing the same title as its diminutive predecessor, was published by the Wilmington Institute in 1860. This work was widely distributed, and is to be found in most of the botanical libraries of this country. It is an annotated list, based on careful collecting throughout New Castle County, and presents a fairly complete account of the ferns and flowering plants growing wild in that area at the time of publication. It enumerates 1106 species and varieties.

Included in the Catalogue is a list of Algae (Diatoms and Desmids, microscopic and for the most part unicellular plants), detected in the county by Christian Febiger, a brother-in-law of Edward Tatnall. These had been the objects of his study and occasional publication over many years. His extensive collection of microscopic slides is at the Academy of Natural Sciences of Philadelphia, and duplicates of many of them are owned by the Society of Natural History of Delaware.

After the publication of the Tatnall Catalogue of 1860, its author continued to assemble manuscript material looking toward the production of a second edition of that work. However, this was never published, although at the time of its author's death it had assumed substantial proportions, adding many species. Two bound copies of this manuscript work are now in the possession of the Society of Natural History of Delaware.

Flora of Delaware and the Eastern Shore

Shortly after Edward Tatnall's death his herbarium was acquired by Colorado College, Colorado Springs, and the work of mounting the specimens and making them available for study has been completed by the botanical staff of that institution. Through correspondence with Asa Gray many of the Tatnall duplicates found their way to the Gray Herbarium, and others are in the Tatnall Herbarium at Wilmington, and at the Academy of Natural Sciences of Philadelphia.

Albert Commons (1829-1919) extended his botanical explorations throughout the state of Delaware, and assembled the most extensive collection of Delaware plants ever made. This included not only flowering plants and ferns, but also mosses, lichens and fungi. His herbarium was presented by two of his nephews to the Academy of Natural Sciences. It gives evidence of care and discrimination on the part of the collector in the identification of his specimens, and of his keenness in detecting new or rare material in the field.

William M. Canby (1831-1904) was the most widely known of the Wilmington botanists. He collected extensively in the southern and southwestern states and on the Pacific Coast, as well as in the local area. He was botanist in charge of the Northern Transcontinental Survey of 1882-83.* He assembled a herbarium of some 30,000 sheets of plants of North America and the Old World, which was purchased by the New York College of Pharmacy in 1892. Upon the organization, in 1891, of the Society of Natural History of Delaware, of which he was a founder and the first president, he got together a second herbarium for the museum of the new Society, where it is now preserved in modern steel cases. This Canby herbarium now contains more than 22,000 sheets, accumulated gradually by a long series of accessions, continuing through the years up to the time of the donor's death, and obtained by him through purchase, exchange and personal collecting. Many duplicates of Canby's Peninsula plants were distributed to the U. S. National Herbarium, the Gray Herbarium, the Arnold Arboretum and other depositories. In the years 1900-1903 Canby and C. S. Sargent collaborated in a study of *Crataegus* of New Castle County, Delaware, and the results were published by Dr. Sargent (1903) in an important paper on this genus. Canby was the discoverer of a

* See J. N. Rose: "William M. Canby", *Bot. Gazette* 37: 346-352, May, 1904.

Introduction

number of new species of plants, several of which were named in his honor.

In 1896 Canby suggested the formation of the "Edward Tatnall Herbarium of New Castle County Plants." This plan has been carried out by segregating in separate cases all of the local specimens from the Canby Herbarium of the Society of Natural History of Delaware.

John T. Pennypacker (1838-1926), a member of the Academy of Natural Sciences of Philadelphia, and for many years treasurer of the Society of Natural History of Delaware, contributed a series of local plants to the Tatnall Herbarium.

Rev. John P. Otis (1846-1934) made a considerable collection of plants of the Peninsula, chiefly from the vicinity of Wilmington, from Sussex County, Delaware, and from Cecil and Wicomico Counties, Maryland. The bulk of his herbarium is in Philadelphia, at the Academy of Natural Sciences, but many sheets are preserved in the Edward Tatnall Herbarium in Wilmington.

The Philadelphia Botanical Club, affiliated with the Academy of Natural Sciences, was founded in 1891, and adopted as its working range all counties within fifty miles of Philadelphia. This included the northernmost parts of Delaware and Maryland, and several members of the new Club soon organized expeditions into New Castle and Cecil Counties, and some of the more active extended their operations into lower Delaware. Most of the specimens collected on these trips are now at the Academy of Natural Sciences and the University of Pennsylvania. A noteworthy undertaking was the so-called "Symposium of 1909," led by C. S. Williamson, and participated in by several members of the Club. From July 4th to 9th a considerable part of Sussex County was explored, and many specimens obtained. An account of this expedition was published by Williamson in *Torreya* 9, 160-166 (1909).

The Annotated List. The Society of Natural History of Delaware now accepts as its special field the entire peninsula of Delaware, Maryland and Virginia, instead of limiting it to the state of Delaware, as originally intended. Pursuant to this policy, the writer was asked to prepare a list of the known flora of the Peninsula, and the work was begun in the spring of 1928. The Society provided the necessary equipment for mounting the specimens to be collected, and for a card catalog of the species.

Data for the list came from several sources. The contents of

Flora of Delaware and the Eastern Shore

the general herbarium of the Academy of Natural Sciences and of the herbarium of the Philadelphia Botanical Club, together numbering more than 650,000 sheets, were checked for specimens from the Peninsula. The herbaria of the University of Pennsylvania, the University of Delaware, the latter containing many plants from the collections of Professors C. O. and F. C. Houghton, Captain H. H. Hanson, H. R. Baker, and others, and the Canby and Tatnall herbaria of the Society of Natural History of Delaware, were also canvassed. Through the kindness of Dr. E. H. Walker and Mrs. Bertha B. Lambert, a number of records of Peninsula plants in the U. S. National Herbarium were sent me, a courtesy which is much appreciated.

It is a matter of regret that the original herbaria of W. M. Canby and E. Tatnall are not readily available. However, it is doubtful whether they would have added much to the information obtained from other sources. Edward Tatnall's collecting in our area was practically limited to New Castle County, and his manuscript catalog, mentioned above, shows that his herbarium would probably have added no species to those otherwise known to grow here. Canby's Peninsula trips were limited, except in the immediate vicinity of Wilmington, to some half-dozen localities accessible by rail, and from which exploration of the surrounding country could be made by means of "horse-and-buggy." These same localities are represented in his more recent collections for the Society's herbarium, so that we probably have nearly all of his local species here in Wilmington.

Active collecting on the Peninsula by the writer began in 1928, and continued until 1941, when restrictions on travel prevented any further long trips by automobile. All of the fourteen counties have been visited several times, and most of them many times. From these trips a herbarium of over 4800 sheets of plants of the Peninsula has resulted.

The Card Catalog. The plant records from all of the above sources have been entered on cards—one card (or more as needed)—to a species. Each entry shows the county in which the specimen was collected, the locality, name of collector, and date. A system of check-marks indicates in what herbaria the specimens have been deposited. On the back of each card is an outline map, on which the records are indicated by dots, so that the known distribution of each species on the Peninsula may be seen at a glance.

Introduction

The Card Catalog is the Society's permanent plant record. Each entry refers to a definite specimen in some herbarium, to which reference may be made in case it is desired to verify the determination. Since there are about 2200 species in our flora, and since the average number of entries for each species is about ten (a conservative estimate), the number of individual entries in the card catalog is at least 20,000.

Distribution of Plant Species on the Peninsula. It is immediately evident from the distribution maps of the card catalog that the collecting over the Peninsula to date has been far from adequate. For many common and well-distributed species the maps show a lack of dots in wide areas in which the plants would probably be found if sought for, but where they have been either missed or ignored. Hence, all statements in the Annotated List relative to frequency or range of occurrence must be regarded as tentative. Much more investigation is needed in order to reach final conclusions in regard to these matters.

There are many species of plants which cannot survive within reach of the influence of salt, either in the soil or carried by spray from the sea in stormy weather. Among those species whose distribution maps show definite avoidance of the coast there are many that appear to be entirely absent from the two Virginia counties of Accomac and Northampton. This follows naturally from the fact that the extreme southern tip of the Peninsula forms a narrow tongue of land between bay and ocean, hardly any point of which is more than five miles from salt water. Among the species in this category are: *Carex crinita*, *C. folliculata*, *C. intumescens*, *Peltandra virginica*, *Symplocarpus foetidus*, *Betula nigra*, *Ilex laevigata*, *Chionanthus virginica*, *Mimulus ringens*, *M. alatus*, *Utricularia inflata*, *Lobelia cardinalis*, *Sclerolepis uniflora*.

Nomenclature and Arrangement. The scientific names of species in the text follow the International Rules, and are those given in the seventh edition of Gray's Manual (1908), except as these have been modified by publication resulting from recent critical study. Synonyms are put in parentheses, and follow the accepted names.

For the most part, sequences of families and genera follow Gray's Manual, although some variations from this have been adopted, in accordance with more recent practice.

Common names are given when they exist and are likely to be

Flora of Delaware and the Eastern Shore

helpful in identifying the species for persons who are not familiar with the scientific names. When there is a choice of common names, the one most generally used in our area has been given. Many species are inconspicuous and seldom noticed except by botanists, and so have never been given common names. No effort has been made to coin names for such as these.

Some idea of the relative frequency of species in our area is given by the use of the terms *common*, *frequent*, *infrequent*, *rare*, and *local*. It seems best not to try to assign quantitative meanings to these terms, at least until the distribution of our species has been more closely determined. When a species is listed as "rare," citations of individual collections are usually given.

Species not native in our area are referred to as either *adventive* (recently arrived and not established), *introduced* (intentionally brought in), or *naturalized* (fully established as part of the local flora). As a rule, species escaped from cultivation have been excluded unless they have become well established.

Many of our species are found only in the Piedmont; others are limited to the Coastal Plain, while still others are at home in both provinces. In general, the status of each species in this respect is indicated.

In many cases, the approximate times of flowering or of maturing fruit are given. Much valuable assistance in this has been obtained from the results of Bayard Long's thorough and protracted observation of flowering and fruiting dates for southern New Jersey, as reported in Witmer Stone's "Plants of Southern New Jersey" (1910). The seasons are essentially the same in that area as in our own. Mr. Long's permission to use these unique data is gratefully acknowledged.

Acknowledgments. A number of persons have generously given me advice and assistance, for which I wish to express my gratitude.

Dr. Francis W. Pennell has revised my Scrophulariaceae and some smaller groups; Dr. Edgar T. Wherry has assisted me in Polemoniaceae and Ferns, and Dr. Walter M. Benner has kindly checked my specimens of *Lycopus*. Mrs. Agnes Chase has helped with some Grasses. Dr. A. V. Smith has given me the benefit of his familiarity with plant localities in the central part of the Peninsula. Mr. Bayard Long has been unfailingly generous of his time and his critical knowledge of our flora. With all of the above persons I

Introduction

have been pleasantly and profitably associated at various times, on expeditions over the Peninsula.

From Professor M. L. Fernald I have received many specimens from the Coastal Plain of Virginia, including a number collected in the portion of that state which is included in the Peninsula. Ernest J. Palmer, of the Arnold Arboretum, has helped with the critical genus *Crataegus*. To Professors C. O. Houghton and F. C. Houghton, of the University of Delaware, and to Mr. H. Raymond Baker, of the State Board of Agriculture at Dover, I am indebted for valuable information as to localities for many Delaware species of plants.

It is a pleasure to acknowledge my especial indebtedness to my friend Dr. Frank Morton Jones, biologist, of Wilmington. Dr. Jones has been a constant collaborator in the present project, and my companion on most of the longer journeys through the Peninsula and many of the shorter ones. His inspiration and wise guidance have been an important factor in initiating the undertaking, and carrying it through to completion.

To my wife, and to my brother, S. A. Tatnall, I am indebted for helpful criticism of the text of the Introduction.

SYMBOLS AND ABBREVIATIONS USED IN THE TEXT

Counties. It is somewhat inconvenient for the present purpose that two counties on the Peninsula, in Delaware and Maryland, respectively, have been given the same name—Kent. They are contiguous for about three miles. However, the code which follows, and which is used throughout, will readily distinguish between them.

<i>Delaware</i>	<i>Maryland</i>
NC = New Castle	Ce = Cecil
K = Kent	Ke = Kent
S = Sussex	QA = Queen Anne's
	Ca = Caroline
	Ta = Talbot
	Do = Dorchester
	Wi = Wicomico
	Wo = Worcester
	So = Somerset
<i>Virginia</i>	
Ac = Accomac	
No = Northampton	

Flora of Delaware and the Eastern Shore

Places. Since three states are involved, names of places are frequently duplicated. For this reason, as well as to facilitate reference to maps, names of localities cited in the text are usually followed by the abbreviations (in parentheses) of the counties in which they are situated.

Herbaria. When individual collections of any species are cited, the herbaria in which the specimens have been deposited are indicated in parentheses immediately after the date of collection. The following abbreviations are used:

- A = Academy of Natural Sciences of Philadelphia.
- D = Society of Natural History of Delaware, at Wilmington
(Canby and E. Tatnall herbaria).
- G = Gray Herbarium, Harvard University.
- P = University of Pennsylvania.
- T = Herbarium of R. R. Tatnall, Wilmington.
- U = United States National Herbarium.
- UD = University of Delaware, Newark.

Lists of authors of scientific names of plants are to be found in most of the manuals, and none is given here. The list in Bailey: "Manual of Cultivated Plants" (1924), and that in Rehder: "Manual of Cultivated Trees and Shrubs" (1940), are especially satisfactory. In the present List, "Michaux" is abbreviated as "Mx." instead of the usual "Michx."

The following *collectors* of Peninsula plants are among those most frequently cited in the Annotated List, often by surname only.

- Abbott, Dr. William L., 1860–1936
- Baker, H. Raymond, 1896–, State Board of Agriculture, Dover, Del.
- Bartram, Edwin B., 1878–, Bushkill, Pa.
- Benner, Dr. Walter M., 1888–, Acad. Nat. Sci., Philadelphia, Pa.
- Brinton, Dr. J. Bernard, 1835–1894
- Brown, Stewardson, 1867–1921
- Canby, William M., 1831–1904
- Carter, Joel J., 1843–1912
- Commons, Albert, 1829–1919
- Crawford, Joseph, 1858–1936
- Dreisbach, Robert R., 1888–, Midland, Mich.

Introduction

- Earle, Miss Elizabeth C., Dept. of Botany, Univ. of Pa., Philadelphia, Pa.
- Fernald, Prof. Merritt L., 1873–, Gray Herbarium, Cambridge, Mass.
- Fogg, Prof. John M., Jr., 1898–, Univ. of Pa., Philadelphia, Pa.
- Fosberg, Dr. F. Raymond, 1908–, Bur. Plant Ind., Washington, D. C.
- Houghton, Prof. Clinton O., 1873–, Univ. of Del., Newark, Del.
- Houghton, F. Courtland, Univ. of Del., Newark, Del.
- Jones, Dr. Frank Morton, 1869–, Wilmington, Del.
- Larsen, Esther L. (Mrs. Kenneth D. Doak), R. D. 4, Crown Point, Ind.
- Leeds, Arthur N., 1870–1939
- Long, Bayard, 1885–, Acad. Nat. Sci., Philadelphia, Pa.
- MacElwee, Alexander, 1869–1923
- McVaugh, Dr. Rogers, 1909–, U. S. Dept. of Agric., Beltsville, Md.
- Meredith, Hugh B., 1853–1929
- Moldenke, Harold N., 1909–, N. Y. Bot. Gard., New York, N. Y.
- Moyer, Dr. Isaac S., 1838–1898
- Nuttall, Thomas, 1786–1859
- Otis, Rev. John P., 1846–1934
- Pennell, Dr. Francis W., 1886–, Acad. Nat. Sci., Philadelphia, Pa.
- Proctor, George R., 1920–, Dept. of Botany, Univ. of Pa., Philadelphia, Pa.
- Shreve, Dr. Forrest, 1878–, Carnegie Inst., Tucson, Ariz.
- Small, Dr. John K., 1869–1938
- Smith, Dr. Augustus V., 1902–, Central High School, Washington, D. C.
- Stone, Hugh E., 1871–, Haverford, Pa.
- Stone, Witmer, 1866–1939
- Tanger, Mrs. L. F. A., Lancaster, Pa.
- Tatnall, Edward, 1818–1898
- Tatnall, Dr. Robert R., 1870–, Wilmington, Del.
- Tidestrom, Ivar, 1865–, Catholic Univ. of Amer., Washington, D. C.
- True, Prof. Rodney H., 1866–1940
- Vanatta, Edward G., 1876–1939
- Van Pelt, Samuel S., 1863–1935

Flora of Delaware and the Eastern Shore

Walker, Dr. Egbert H., Smithsonian Institution, Washington,
D. C.

Wherry, Prof. Edgar T., 1885-, Univ. of Pa., Philadelphia, Pa.

Wilkens, Hans, 1898-, Reading, Pa.

Williamson, Charles S., 1857-1914.

ROBERT R. TATNALL

Wilmington, Del.

15 October, 1946

ANNOTATED LIST OF FERNS AND FLOWERING PLANTS

OPHIOGLOSSACEAE (ADDER'S TONGUE FAMILY)

Ophioglossum L. ADDER'S TONGUE.

O. vulgatum L. var. *pycnostichum* Fern. See *Rhodora* 41, 494. 1939.

Infrequent, in moist, shaded ground, Piedmont and Coastal Plain, north of the Virginia line.

Var. *pseudopodium* (Blake) Farwell.

Rare: woods near Centreville (NC), *Commons*, 14 July 1873 (A).

Botrychium Sw. GRAPE FERN.

B. dissectum Spreng. (*B. obliquum* var. *dissectum* (Spreng.) Clute.)
LACE-LEAVED GRAPE FERN.

Frequent throughout, in wet or dry woodlands.

Var. *obliquum* (Muhl) Clute. (*B. obliquum* Muhl.) COARSE-
LOBED GRAPE FERN.

Same habitats as *B. dissectum*, often in close association with it.

Var. *tenuifolium* (Underwood) Farwell.

Infrequent, in moist woods and thickets; known from Talbot, Dorchester, Wicomico and Worcester Counties.

B. virginianum (L.) Sw. RATTLESNAKE FERN.

Frequent throughout, in meadows and rich woods.

OSMUNDACEAE (FLOWERING FERN FAMILY)

Osmunda L.

✓ *O. regalis* L. var. *spectabilis* (Willd.) Gray. ROYAL FERN.

Common throughout, in meadows, swamps and wet woods.

O. Claytoniana L. INTERRUPTED FERN.

Woods and swamps; frequent in the Piedmont; rare on the Coastal Plain: dry woods near Wattsville (Ac), (A. V. Smith), R. R. Tatnall, 4354, 10 Aug. 1939 (A).

Osmunda OSMUNDAC.—POLYPODIAC. *Phegopteris*

O. cinnamomea L. CINNAMON FERN.

Common in moist ground. The Cinnamon Fern has been collected in every county of the Peninsula, except Wicomico.

Var. *frondosa* Gray.

Rare, in moist ground: by streamlet in woods, 1 mi. e. of Coldwell Corners (NC), *R. R. Tatnall*, 898, 30 May 1930 (T, A); bog 2 mi. s. of Milton (S), *R. R. Tatnall*, 2183, 9 June 1934 (T).

SCHIZAEACEAE (CURLY-GRASS FAMILY)

Lygodium Sw. CLIMBING FERN.

L. palmatum (Bernh.) Sw.

One known station: on a shaded slope bordering swampy ground, $1\frac{1}{4}$ mi. w.n.w. of Bear Station (NC). A colony of about a dozen plants, detected by *H. H. Hanson*, 13 Feb. 1932. Very slowly spreading; sporophylls first developed in 1941. A second stand in the same vicinity, discovered by *R. Earle Dickey*, has probably been destroyed.

Apparently not introduced, in our locality.

POLYPODIACEAE (FERN FAMILY)

Polypodium L. POLYPODY.

P. virginianum L. (*P. vulgare* of Gray's Man., ed. 7.) ROCK POLYPODY.

Common on rocks of the Piedmont; infrequent on the Coastal Plain, where it occasionally grows on banks, in rich soil, and even on trunks of trees.

P. polypodioides (L.) Watt var. *Michauxianum* Weatherby. (*P. incanum* Sw.) TREE POLYPODY.

Infrequent, on trunks of trees, usually at a considerable height above the ground, from Sussex County to central Accomac County.

Phegopteris (Presl) Fée. BEECH FERN.

P. hexagonoptera (Mx.) Fée. BROAD BEECH FERN.

Frequent in open deciduous woods of the Piedmont; less common on the Coastal Plain.

P. polypodioides Fée. (*P. connectilis* Watt). LONG BEECH FERN.

There is a sheet in the Canby herbarium in Wilmington, labeled "Woods, New Castle County, Miss Fell," probably collected about

75 years ago. In view of recent collections in southeastern Pennsylvania, it seems reasonable to assume that this northern fern was actually found in Delaware.

Adiantum L.**A. pedatum L. MAIDENHAIR FERN.**

Frequent in rich woodlands of the Piedmont; infrequent on the Coastal Plain.

Pteridium Scop. BRACKEN.

- ✓ **P. aquilinum (L.) Kuhn var. latiusculum (Desv.) Underwood.**
(*Pteris aquilina* of Gray's Man., ed. 7.) COMMON
BRACKEN.

Common in thickets and on dry banks, Piedmont, and Coastal Plain southward to the Virginia line.

Var. pseudocaudatum (Clute) Heller.

Infrequent, in very acid soil, Caroline County and southward; one collection from near the Fall Line: near Ogletown (NC), *R. R. Tatnall*, 7 Aug. 1922 (T).

Cheilanthes Sw.**C. lanosa (Mx.) Eaton. HAIRY LIP-FERN.**

Rare, on rocky hills: Cromley's Mount (Ce), *Pennell*, 1 July 1914, (A, U); several old collections (1864-1891), on banks of Brandywine Creek, in and near Wilmington, where now extinct (A, D).

Anchistea Presl.

- ✓ **A. virginica (L.) Presl. (*Woodwardia virginica* (L.) Sm.) VIRGINIA CHAIN FERN.**

Frequent in swamps and moist thickets throughout the Peninsula, south of the Fall Line.

Lorinseria Presl.

- L. areolata (L.) Presl. (*Woodwardia areolata* Moore.) NET-VEINED CHAIN FERN.**

Common throughout, except in the uplands, in swamps and wet acid woods.

Asplenium L. SPLEENWORT.**A. pinnatifidum Nutt.**

One collection: wooded ravine near Susquehanna River, 1¼ mi. n. w. of Pilot (Ce), *L. F. A. Tanger*, 4101, 11 Dec. 1940 (A).

A. platyneuron (L.) Oakes. (*A. ebeneum* Ait.) EBONY SPLEENWORT.

Common throughout, on grassy banks and in open pine woods.

A. Trichomanes L. MAIDENHAIR SPLEENWORT.

Rare, in moist rock-crevices along the Brandywine and Red Clay Creeks (NC). Not collected since 1893.

Athyrium Roth. (*Asplenium* L.)

A. thelypteroides (Mx.) Desv. (*Asplenium acrostichoides* Sw.) SILVERY SPLEENWORT.

Frequent, in ditches and moist sandy woods.

A. asplenioides (Mx.) Desv. LOWLAND or SOUTHERN LADY-FERN.

Frequent throughout, in wet woods and thickets, and on banks of streams.

A. angustum (Willd.) Presl. UPLAND or NORTHERN LADY-FERN.

In the same habitats as the preceding species, but less common.

This species and the last preceding one seem to have roughly the same distribution in our area, both of them occurring in both Piedmont and Coastal Plain. There is much intergrading, so that it is often difficult to separate the species. Some writers prefer to regard them as merely extreme forms of a single species, *A. Filix-foemina* (L.) Bernh.

Camptosorus Link. WALKING FERN.

C. rhizophyllus (L.) Link.

Rare, on wooded rocky slopes of the Piedmont: Mt. Cuba (NC), *Commons*, July 1865 (A); near Centreville (NC), *Commons*, 13 June 1877 (A); woods above Rowlandsville (Ce), *Long & Bartram*, 31 May 1913 (A); Conowingo (Ce), *Fogg*, 30 May 1926 (P); high up the rocky slope, along east side of Brandywine Creek above Rockland (NC), (*Charles R. Tatnall*), *R. R. Tatnall*, 232, 24 March 1929 (T); near foot of rocky slope, just above deep railway cut, $\frac{1}{2}$ mi. n. of Mt. Cuba, about 40 feet from track, *R. R. Tatnall*, 1195, 27 June 1931 (T); same as last, but about 25 feet from track, *R. R. Tatnall*, 5004, 17 April 1942 (T).

Polystichum Roth.

P. acrostichoides (Mx.) Schott. CHRISTMAS FERN.

Woods, ravines and stream banks, in rocky, sandy or rich soil,

throughout our area; common in the northern portion; rarer southward.

Var. **Schweinitzii** (Beck) Small.

Reported from New Castle County only, with but one collection in recent years: old race bank along Red Clay Creek, south of Lancaster Pike (*F. M. Jones*), *R. R. Tatnall*, 2 July 1927 (T).

Dryopteris Adans. (*Aspidium* Sw.) WOOD FERN.
SHIELD FERN.

D. spinulosa (Müller) Ktze. TOOTHED WOOD-FERN.

Frequent in wet, rocky, upland woods, and in low, moist woods of the Coastal Plain, southward to Accomac County.

D. intermedia (Muhl.) Gray. (*D. spinulosa* var. *intermedia* (Muhl.) Underwood.) EVERGREEN WOOD-FERN.

Frequent in rocky woods of the Piedmont; rare in sandy woods southward to Wicomico County: pine woods 3 mi. n. e. of Whitehaven (Wi), *A. V. Smith* & *R. R. Tatnall*, 4564, 1 Aug. 1940 (T, A).

D. marginalis (L.) Gray. MARGINAL SHIELD-FERN.

Common on rocky wooded slopes of the Piedmont; frequent on sandy banks of the Coastal Plain, southward to Wicomico County (*A. V. Smith*).

D. Goldiana (Hooker) Gray. GIANT WOOD-FERN.

Infrequent, in rocky woods of the Piedmont.

× **D. celsa** (Palmer) Small. (*D. Goldiana* × *Clintoniana*).

Rare. Abundant at a single station in woods on Sinepuxent Neck (Wo), 8 mi. s. s. w. of Ocean City (*A. V. Smith*), *R. R. Tatnall*, 4755, 12 Oct. 1940 (T, A).

D. Clintoniana (D. C. Eaton) Dowell. BROAD SWAMP-FERN.

Rare: Centreville (NC), *Commons*, 10 Aug. 1867 and 13 June 1877 (A); Mt. Cuba (NC), *Commons*, 10 Aug. 1867 and 26 May 1884 (A); swamp 1 mi. s. w. of Kenton (K), *Wherry*, 12 Oct. 1935 (A).

D. cristata (L.) Gray. CRESTED SWAMP-FERN.

Infrequent in swamps and low woods, Piedmont, and Coastal Plain southward to Wicomico County (*A. V. Smith*).

D. Boottii (Tuckerm.) Underw. GLANDULAR SWAMP-FERN.

Rare: near Wilmington, *Commons*, 3 July 1873 (A); near Centreville (NC), *Commons*, 8 July 1876 (A).

× **D. atropalustris** Small. (*D. Goldiana* × *D. cristata*.)

Rare, in deep swamps: 1 mi. s. w. of Kenton (K), *Leeds & Wherry*, 3712, 21 Aug. 1936 (A); same locality, *R. R. Tatnall*, 3080, 21 Aug. 1936 (T).

Wherry says of this hybrid, in "Guide to Eastern Ferns," ed. 2, 1942, "Known only in Kent County, Delaware, the Dismal Swamp of Virginia, and southeastern South Carolina." Apparently it has now ceased to exist at the Delaware locality.

Thelypteris Schmidel. (*Dryopteris* Adans.)**T. noveboracensis** (L.) Niewl. NEW YORK FERN.

Common in rich woods and moist ground northward; rare in the Virginia counties: 2 mi. s. w. of Eastville (No), *Leeds*, 19 July 1936 (A).

✓ **T. palustris** Schott var. **pubescens** (Lawson) Fernald. (*Aspidium Thelypteris* (L.) Sw.) MARSH FERN.

Frequent throughout, in swamps, ditches and damp woods.

Var. **Haleana** Fernald.

Rare: 2 mi. n. e. of Trappe (Ta), *Earle*, 2317, 3 Sept. 1939 (P).

T. simulata (Davenport) Niewl. BOG FERN.

Rare, in bogs and moist woods: Salisbury (Wi), *Canby*, Sept. 1887 (P); swamp 2 mi. n. e. of Longwoods (Ta), *Wherry*, 13 Oct. 1935 (P, A); same locality, *R. R. Tatnall*, 3112, 21 Aug. 1936 (T, G); along tributary of Beaverdam Creek, ½ mi. s. of Johnson Pond, near Salisbury, *A. V. Smith, Wherry & Tatnall*, 3974, 8 Sept. 1938 (T, P, A); swamp at roadside, ½ mi. s. of Bethel (S), *A. V. Smith, Wherry & Tatnall*, 3986, 8 Sept. 1938 (T, A).

Cystopteris Bernh.**C. fragilis** (L.) Bernh. var. **protrusa** Weatherby. (*Rhodora* 37, 373-378. 1935.) LOWLAND BRITTLE FERN.

Frequent; wet rocks and alluvial soil, Piedmont province.

Var. **Mackayii** Lawson. UPLAND BRITTLE FERN.

Rare, in rocky places of the Piedmont: west bank of Brandywine Creek, below High Bridge, *Commons*, June 1868 (A); crevices of retaining wall along highway, at low point just west of Smith's Bridge, e. of Granogue (NC), *R. R. Tatnall*, 5013, 28 May 1942 (T).

Woodsia R. Br.

W. obtusa (Spreng.) Torr. CLIFF FERN.

Infrequent, in rocky woods and on wooded slopes. Known from New Castle, Cecil, Queen Anne's and Talbot Counties.

Dennstaedtia Bernh. (*Dicksonia* L'Hér.)

D. punctilobula (Mx.) Moore. HAY-SCENTED FERN.

Frequent; thickets, banks and woods, north of the Virginia line.

Onoclea L.

O. sensibilis L. SENSITIVE FERN. BEAD FERN.

Common in swamps, ditches and river bottoms as far south as the Virginia line; one collection in Northampton County: 3 mi. s. w. of Eastville, *Leeds*, 3648, 19 July 1936 (A).

LYCOPODIACEAE (CLUB-MOSS FAMILY)

Lycopodium L. CLUB-MOSS.

L. lucidulum Mx. SHINING CLUB-MOSS.

Common in cool, damp woods, throughout, except south of the Virginia line.

L. alopecuroides L. FOX-TAIL CLUB-MOSS.

Coastal Plain species; common in Sussex County; infrequent in Wicomico and Worcester Counties; rare in New Castle County: swamps, Delaware City, *Commons*, 13 Aug. 1872 (A); Farnhurst, *C. O. Deakyne, Jr.*, Oct., 1938 (UD).

✓ **L. inundatum** L. var. **adpressum** Lloyd & Underw.

Frequent and generally distributed throughout, in swamps, sandy bogs and wet meadows.

L. clavatum L. RUNNING CLUB-MOSS.

Rare, in the Piedmont area: "Swamps" (NC), *E. Tatnall* in 1842 (D); swamp, Farnhurst, *Commons*, 11 July 1866 (A); low woods

about a pondhole on Welch Point, Back Creek Neck (Ce), *Long*, 57070, 20 July 1941 (A).

L. obscurum L. (Incl. var. *dendroideum* (Mx.) D. C. Eaton.)
GROUND PINE.

Common in the Piedmont, and Coastal Plain, southward to the Virginia line.

[**L. carolinianum** L.

Reported by *Redmond* in "Flora of Worcester County, Md."
No specimen seen.]

L. complanatum L. var. *flabelliforme* Fern. (*L. flabelliforme* Blanchard.) RUNNING PINE.

Common in dry woods of the Piedmont area; frequent on the Coastal Plain southward to the Virginia line.

L. tristachyum Pursh. GROUND CEDAR.

Infrequent in sandy woods of the Coastal Plain; known from New Castle, Cecil, Sussex, Wicomico and Worcester Counties.

SELAGINELLACEAE (SPIKE-MOSS FAMILY)

Selaginella Beauv.

S. rupestris (L.) Spring. ROCK SPIKE-MOSS.

Rare, on dry rocks: east bank of Brandywine Creek, above Augustine paper mill, Wilmington, *Commons*, July 1865 (A). This is the only known collection in our area, but in 1937 a small colony was discovered by *Bayard Long* on a rock some 200 feet north of the state line, in Delaware County, Pa., at Point Lookout, $\frac{1}{2}$ mi. n. w. of Granogue, Del.

S. apoda (L.) Fern. (*S. apus* Spring.) MEADOW SPIKE-MOSS.

Frequent; Piedmont and Coastal Plain; on moist clay soil in meadows and on stream banks, and in salt meadows along the coast; also introduced on lawns in Wilmington.

ISOËTACEAE (QUILLWORT FAMILY)

Isoëtes L. QUILLWORT.

I. Engelmanni A. Braun.

Ponds, ditches and low woods; rather frequent in the upland region of New Castle and Cecil Counties; rare on the Coastal

Plain, except near the Fall Line: ponds, Townsend (NC), *Canby*, 4 July 1896 (D); streamlet in swampy woods, just w. of Townsend (NC), *Long*, 3 July 1909 (A); ditches, Ellendale (S), *Canby*, 24 July 1893 (D); edge of Custis pond in woods, Savage Neck (No), *Fernald*, *Long & Fogg*, 5228, in 1935.

Var. valida Engelm.

Specimens from four collections from New Castle County, three of them dating from the last century, were determined by T. C. Palmer. Pondhole in field just w. of Vandyke Station (NC), *Long*, 3 July 1909 (A).

I. riparia Engelm.

Collected in tidal mud of Delaware River, at and north of Wilmington, by *Canby*, *Commons*, and *E. Tatnall*, between 1862 and 1896; not seen since then.

Wastes from oil refineries have nearly exterminated the littoral flora of this region.

I. saccharata Engelm.

Common in tidal mud of Elk, Bohemia, Chester, Choptank, Nanticoke and Wicomico Rivers and their tributaries, in brackish to fresh water; also in a fresh-water pond at Milford (S), *Long*, 21 July 1908 (A).

EQUISETACEAE (HORSETAIL FAMILY)

Equisetum L. HORSETAIL.

E. arvense L. COMMON FIELD HORSETAIL.

Common and abundant in the Piedmont area; less frequent southward on the Coastal Plain, to the Virginia line. In thickets and ditches and on roadsides and railroad banks, apparently preferring sterile soil. Spores ripe in April.

E. sylvaticum L. var. multiramum (Fern.) Wherry. WOOD HORSETAIL.

Rare, if still present, in our area: Adams Mill, near Rockland (NC), *Commons*, May 1864 (A); damp roadside west of Hockessin (NC), *Canby*, 8 May 1897 (D).

E. fluviatile L. (E. limosum L.) WATER HORSETAIL.

Infrequent to rare, on river shores and along streamlets: Bellevue (NC), near station, *Commons*, June 1868 (A); Port Penn (NC), *J.*

J. Carter, 28 July 1884 (A); south bank of Drawyers Creek, above DuPont Highway, 1 mi. n. of Odessa (NC), *R. R. Tatnall*, 4 July 1929 (T); along Iristown road, near North East (Ce), *Otis*, 8 April 1913 (D); streamlet west side of DuPont Highway, 1 mi. n. of Fieldsboro (NC), *R. R. Tatnall*, 4188, 3 June 1939 (T, A).

A northern species, here reaching its southern limit.

E. praealtum Raf. (*E. hyemale* Pursh.) TALL SCOURING RUSH.

Frequent on stream banks, railroad embankments and moist slopes, in the Piedmont, and central part of our Coastal Plain.

PINACEAE (PINE FAMILY)

Pinus L. PINE.

P. Strobus L. WHITE PINE.

Occasional young trees, probably introduced, have been seen in wooded areas: near Hazlettville (K), small tree in the woods, *Otis*, 15 May 1924 (A); small tree (6 feet) on the shore of Great Bohemia Creek, Middle Neck (Ce), *R. R. Tatnall*, 5 May 1929 (T). There is a fine stand of mature White Pine 3 miles southwest of Harrington (K) on a farm along the road to Denton. A resident of the neighborhood told the writer that these trees had been planted by his grandfather: (*W. S. Taber*), *R. R. Tatnall*, 2849, 27 Oct. 1935 (T).

P. Taeda L. LOBLOLLY PINE.

Common in the lower part of the Peninsula, where it forms pure stands of considerable area as far north as Sussex County, and occurring with increasing scarcity northward to Kent and lower New Castle Counties, Del.

✓ **P. rigida** Mill. PITCH PINE.

Dry woods, swamps and coastal sand dunes; infrequent in New Castle County, more common in Sussex County and southward; usually occurring as scattered individual trees.

P. serotina Mx. POND PINE.

Infrequent; river banks and pond margins, Sussex County and southward.

P. pungens Lamb. TABLE MOUNTAIN PINE.

Represented in our area by a single tree in a fencerow at Welsh Tract Church, three miles south of Newark (NC).



EASTERN HEMLOCK, (*Tsuga canadensis*)

Photographed on the bank of Elk River, in lower Cecil County. This characteristically northern tree reaches its southernmost tidewater distribution on our Peninsula.

P. virginiana Mill. (*P. inops* Ait.) SCRUB PINE.

Common throughout; forming extensive pure stands in the southern portion.

P. echinata Mill. SHORTLEAF PINE.

Infrequent in Delaware and Maryland; one known report from Cecil County: Elk Neck, *W. L. Abbott*, 1923 (A).

Tsuga Carr. HEMLOCK.

T. canadensis (L.) Carr. EASTERN HEMLOCK.

A single tree on the banks of Red Clay Creek at Greenbank (NC), first reported by *Commons* in 1856, is still standing, and is believed not to have been planted; several trees on the bank of Drawyers Creek, near Odessa (NC), may have sprung from planted trees in the grounds of near-by Drawyers Church.

On the banks of Tuckahoe Creek, in both Caroline and Talbot Counties, south of Hillsboro, and along Choptank River and Watts Creek, below Denton (Ca), there are Hemlock groves of considerable extent. These appear to be native stands, probably remnants of an ancient forest.

Taxodium Richard

T. distichum Rich. BALD CYPRESS.

River swamps, stream banks and ponds, from lower Sussex County southward to the Virginia line.

The "Great Cypress or Cedar Swamp," about 15 square miles in area, extending from Frankford and Selbyville on the east to Gumboro on the west, and crossing the line into Worcester County, was explored by *Thomas Nuttall* in 1809; (See *Bartonia* No. 20, 1. 1940). It was formerly a center of supply for the logs from which "Cypress" shingles were made, but destruction of the swamp forest by fire, and the exhaustion of the supply of submerged trunks, have practically put an end to this once-flourishing local industry.

Chamaecyparis Spach

C. thyoides (L.) BSP. WHITE CEDAR.

In fresh-water swamps and on the banks of ponds and streams; rare in New Castle County: Cedar Swamp, *Commons*, 1867 (A); frequent in the central portions of the Peninsula and southward.

Juniperus L. JUNIPER.✓ **J. virginiana L. RED CEDAR.**

Common throughout; roadsides, fields, serpentine barrens, coastal dunes and beaches.

J. communis L. JUNIPER.

Tree or shrub of the North and of the southern Appalachians, rare in our Piedmont area: "In Wilmington," *Commons* in 1863 and 1890 (A); also reported by *E. Tatnall* (MS Catalog) as occurring on "dry, sterile soil, Brandywine Hundred, scarce." Probably not now, if ever, to be found growing naturally in our area.

TYPHACEAE (CAT-TAIL FAMILY)**Typha L. CAT-TAIL.**✓ **T. latifolia L. BROAD-LEAVED CAT-TAIL.**

Common throughout, in marshes and wet places generally.

H ✓ **T. angustifolia L. NARROW-LEAVED CAT-TAIL.**

Common throughout in wet ground, preferring salt or brackish habitats.

Var.

A slender form, perhaps deserving varietal status, 12 dm. or less in height, with leaf blades 2-4 (-5) mm. wide, and pistillate spikes 7-10 cm. long and 5-7 mm. thick, has been found on ✓ borders of salt marshes in Somerset County: 9 miles west of Princess Anne, on road to Deal Island, *Jones & Tatnall*, 945, 5 July 1930 (T); same locality, *R. R. Tatnall*, 1138, 30 May 1931, and 2667, 4 June 1935 (T, D, G); 4 miles west of Princess Anne, *R. R. Tatnall*, 1139, 30 May 1931 (T).

SPARGANIACEAE (BUR-REED FAMILY)**Sparganium L. BUR-REED.****S. eurycarpum Engelm.**

Frequent in marshes. May, June.

S. americanum Nutt. (Incl. var. *androcladum* (Engelm.) Fernald & Eames.)

Frequent; borders of ponds and streams. June, July.



BALD CYPRESS, (*Taxodium distichum*)

Reaching its northern limit of natural distribution on our Peninsula, this tree accentuates the typically southern character of the landscape of its habitat. Photographed near Snow Hill, Maryland. (See text on page 11.)

POTAMOGETONACEAE (PONDWEED FAMILY)

Potamogeton L. PONDWEED.

P. natans L.

Infrequent in ponds and slow streams. Frt. July to Sept.

P. epihydrus Raf. var. **Nuttallii** Fernald.

Frequent in streams and ponds of the Piedmont and Coastal Plain. Frt. July to Sept.

P. americanus C. & S. (*P. nodosus* Poir. See Rhodora 45, 125. 1943.)

Frequent in streams, chiefly in the Piedmont. Frt. Aug., Sept.

P. pulcher Tuckerman.

In ponds and ditches; frequent north of the Virginia line. Frt. late June, July.

P. Richardsonii (Bennett) Rydb. (*P. perfoliatus* L. var. *Richardsonii* (Fieb.) Graebn.)

Infrequent; ponds and river shores, Cecil and Sussex Counties. Frt. Aug., Sept.

✓ **P. bupleuroides** Fernald. (*P. perfoliatus* var. *bupleuroides* (Fernald) Farwell.)

Infrequent; in fresh and brackish streams, chiefly of the Coastal Plain. Frt. July to Sept.

P. crispus L.

Infrequent; in Brandywine and Red Clay Creeks (NC); the last known collection made in 1880.

P. Berchtoldi Fieber var. **colpophilus** (Fernald) Fernald. (*P. pusillus* L. var. *colpophilus* Fernald. See Rhodora 42, 246. 1940.)

Rare: Snow Hill (Wo), *Shreve & Jones*, 1087 (U).

Var. **tenuissimus** (Mertens & Koch) Fernald.

Rare: Drummonds Pond, s. w. of Parksley (Ac), *R. R. Tatnall*, 2654, 3 June 1935 (T); "Newark road under Del. R. R.," *E. Tatnall* in 1896 (D).

Var. **lacunatus** (Hagström) Fernald.

Rare: stagnant pool along Big Elk Creek (Ce), *Pennell*, 26 July 1913 (A).

Var. **mucronatus** (Fieb.) Graebn.

Rare: in Scott's Run, Ruthby (NC), *Commons*, 4 Sept. 1896 (A).

P. foliosus Raf. var. **macellus** Fernald.

In water of Brandywine and Red Clay Creeks (NC). Not known to have been collected since 1886.

P. diversifolius Raf. (*P. hybridus*, in part, of Gray's Man., ed. 7.)

Frequent in ponds and ditches, chiefly of the Coastal Plain. Frt. June, July.

Var. **multidenticulatus** (Morong) A. & G.

Rare: shallow ponds, Rehoboth (S), *Commons*, 15 July 1897 (A); Ellendale (S), *Long & Bartram*, 6 July 1913 (A).

P. spirillus Tuckerm.

Rare: Wilmington, *Commons*, July — (A); ponds, Rehoboth (S), *Commons*, 15 Aug. 1895 (A). Frt. late June to Aug.

P. capillaceus Poir.

Infrequent; ponds and ditches of the Coastal Plain. Frt. July, Aug.

✓ **P. pectinatus** L.

Infrequent; in salt or brackish water, shores of Atlantic Ocean and Chesapeake Bay. Frt. July.

P. Robbinsii Oakes.

Known only from the Chesapeake and Delaware Canal, near Delaware City (NC), where it seems to have been last collected in 1897, by *Tatnall & Commons*.

Ruppia L.

✓ **R. maritima** L. DITCH GRASS.

Salt or brackish shores and streams; common on the Coastal Plain from southeastern New Castle County southward. Frt. July to Oct.

Zannichellia L.

✓ **Z. palustris** L. HORNED PONDWEED.

Fresh or brackish streams and ditches in the northern part of our Coastal Plain area; infrequent. Frt. June to Oct.

ZOSTERACEAE

Zostera L.

✓ *Z. marina* L. EEL GRASS.

Normally frequent in shallow coastal waters, but more or less periodically disappearing, as a result of the attacks of a parasite.

SCHEUCHZERIAACEAE

Triglochin L. ARROW GRASS.

✓ *T. striata* R. & P.

Rare; in salt marshes near the coast: below mouth of Indian River (S), *Commons*, 10 Sept. 1875 (A); Ocean City (Wo), *Canby*, 23 July 1893 (D); Greenbackville (Wo), *Shreve*, 1117 (U).

A southern plant, here at or near its northern limit.

✓ *T. maritima* L.

Rare, in coastal salt marshes: "Lewiston, Del." (Lewes (S)), *Nuttall*, without date, probably 1809 (A).

A northern species, here at about the southern limit of its range.

NAJADACEAE

Najas L.

N. flexilis (Willd.) R. & K.

One collection: Red Point, Northeast River (Ce), *Otis*, 9 Aug. 1912 (A, D).

✓ *N. guadalupensis* (Spreng.) Morong.

Infrequent; in fresh or brackish coastal waters, and in ponds of the Coastal Plain.

N. gracillima (A. Br.) Magnus.

Infrequent in ponds and streams of Sussex County; rare farther north: in Smyrna River, Smyrna (NC), *Van Pelt & Long*, 14 Aug. 1908 (A).

ALISMACEAE (WATER-PLANTAIN FAMILY)

Sagittaria L. ARROW-HEAD.

S. longirostra (Micheli) J. G. Sm.

Infrequent; in ditches and springheads, in or near the Piedmont. Frt. Sept.

S. latifolia Willd.

Common and widely distributed on the Peninsula. Frt., Sept.

S. pubescens Muhl. (*S. latifolia* var. *pubescens* (Muhl.) J. G. Sm.)

Infrequent; swamps and banks of streams of the Piedmont.

S. Engelmanniana J. G. Sm.

Rare, ponds and ditches: Tubmill Pond, 2 mi. n. of Milford (K), *Otis*, 10 Sept. 1920 (A); pool in meadow above Salisbury (Wi), *Wherry & Pennell*, 12833, 4 Sept. 1925 (A); near Vienna (Wi), *F. Shreve*, No. 1309 (U).

✓ **S. falcata** Pursh. (*S. lancifolia* of Gray's Man., ed. 7.)

Infrequent, swamps and brackish river shores, Caroline County and southward.

S. rigida Pursh.

Rare: several collections, from 1860 to 1896, on the shore of Delaware River and tributaries near Wilmington, later exterminated in these localities by industrial wastes; Dover (K), *Commons*, 1863 (A).

S. graminea Mx. See Clausen: *Rhodora* 39, 29-31. 1937.

Frequent; borders of ponds, wet fields and muddy banks of streams, from the Fall Line southward to Sussex County. Frt. July, Aug.

S. Eatoni J. G. Smith.

Rare: tidal mud of Delaware River, Gordon Heights, *Commons*, 10 Aug. 1894 (A). No other known collection.

S. teres Wats. See Clausen: l. c.

Rare: Salisbury (Wi), *Commons*, Sept. 1863 (A); millpond at Milton (S), *Commons*, 17 Aug. 1899 (A).

S. subulata (L.) Buch.

Frequent in tidal mud of the Coastal Plain, southward to Wicomico County. Frt. Sept.

Var. **natans** (Mx.) J. G. Smith. (*S. lorata* (Chapm.) Small.

See Fernald: *Rhodora* 42, 408. 1940.)

Rare: in Hudson Pond, 5 mi. s. of Milford (S), *Otis*, in 1913 (D). The specimen is fragmentary and its determination uncertain.

Lophotocarpus Durand

L. spongiosus (Engelm.) J. G. Smith.

Infrequent in ditches, and tidal mud of Delaware River, in New Castle County, where not recently collected; reported from the shore of Nanticoke River in Wicomico County near Vienna, by *F. Shreve*, No. 1296 (U).

Helianthium Engelm.

H. parvulum (Engelm.) Small. (*Echinodorus tenellus* of Gray's Manual, ed. 7.)

Rare: border of pond, Canterbury (K), *Canby*, July 1874 (D).

Alisma L.

A. subcordatum Raf. (*A. Plantago-aquatica* of Gray's Man., ed. 7.)

Common in ponds and ditches, Piedmont and Coastal Plain. Frt. Aug., Sept.

VALLISNERIACEAE (TAPE-GRASS FAMILY)

Anacharis B. & P. WATER WEED.

A. canadensis (Mx.) Planch. (*Elodea canadensis* of Gray's Man., ed. 7.)

Frequent but seldom collected, in fresh water of streams and ponds: Delaware City (NC), *Commons*, 21 June 1897 (A); Noxon-town Pond (NC), *C. O. Houghton*, 20 June 1916 (UD).

A. occidentalis (Pursh) Victorin. (*Philotria angustifolia* (Muhl.) Brit.)

A northern species, infrequent in New Castle and Cecil Counties; rare farther south: in Miles River, n. w. of Easton (Ta), *Earle*, 2221, 4 July 1939 (P). Fl. June to Aug.

A. densa (Planch.) Vict.

Commonly grown in aquariums and fish ponds; occasionally escaping and persisting in ponds and streams: in Wicomico River, s. w. of Salisbury (Wi), *R. R. Tatnall*, 3962, 8 Sept. 1938 (T); Hoopes Reservoir, n. w. of Wilmington, *R. R. Tatnall*, 4980, 12 Oct. 1941 (T). Fl. Oct.

Vallisneria L. TAPE GRASS.

V. americana Mx. (*V. spiralis* of Gray's Man., ed. 7.)

Common in ponds and slow streams of the Coastal Plain. Fl. July to Sept.

HYDROCHARITACEAE (FROG'S BIT FAMILY)

***Limnobium* Richard**

L. Spongia (Bosc) Steudel. FROG'S BIT.

Rare: shallow ditches, Delaware City (NC), *Commons* in 1871, 1874, 1880 (A); border of Dragon Marsh, $\frac{3}{4}$ mi. s. w. of Delaware City, *R. R. Tatnall*, 3427, 26 June 1937; 3439, 13 July 1937; 3853, 16 June 1938; and 4378, 16 Aug. 1939 (T, A, P, G), at the last date abundantly flowering and fruiting; in Furnace Creek (Ce), *F. Shreve*, No. 403 (U).

A southern species, reaching its northern limit, for the Coastal Plain, at our stations, or possibly in southern New Jersey.

GRAMINEAE (GRASS FAMILY)

In the Grasses, the sequence of genera and species is that of Hitchcock: "Manual of the Grasses of the United States" (1935).

BAMBUSEAE

***Sasa* Makino & Shibata**

S. japonica (S. & Z.) Makino.

This introduced Bamboo is growing in a dooryard $2\frac{1}{2}$ mi. w. s. w. of Libertytown (Wo), about $\frac{3}{4}$ mi. n. w. of the bridge over Ninepin Creek: *R. R. Tatnall*, 4757, 13 Oct. 1940 (T).

FESTUCEAE

***Bromus* L. BROME GRASS.**

B. inermis Leyss. SMOOTH BROME.

Escaped from cultivation at the University of Delaware Agric. Exp. Sta., Newark (NC), *O. A. Pope*, in 1928 (UD). Introd. from Europe.

B. purgans L. CANADA BROME.

Common in rocky woods of the Piedmont. June, July.

B. latiglumis (Shear) Hitchc.

Rare, in alluvial soil along streams: Bald Friar (Ce), *Van Pelt*, 1 Sept. 1909 (A); near Sharptown (Wi), *Otis*, 8 Oct. 1914 (D); woods 1 mi. s. s. w. of Rowlandsville (Ce), *R. R. Tatnall*, 4722, 8 Oct. 1940 (T, G). Sept., Oct.

B. brizaeformis Fisch. & Mey. RATTLESNAKE CHESS.

Occasional in waste ground: Wilmington, *Commons*, 6 July 1898

(D, A); weed in sandy ground, Rehoboth (S), A. S. Hitchcock, 19 June 1905 (A). June, July. Introd. from Europe.

B. secalinus L. CHEAT.

Weed in grain fields. June. Introd. from Europe.

B. japonicus Thunb. JAPANESE CHESS.

Rare weed in fields: 2½ mi. s. x w. of Unionville (Ta), Earle, 3906, 18 June 1944 (P). Adv. from Europe.

B. commutatus Schrad. HAIRY CHESS.

Common weed throughout, on roadsides and in waste places. May, June. Adv. from Europe.

B. mollis L. (*B. hordeaceus* of Gray's Man., ed. 7.) SOFT CHESS.

Rare weed in cultivated ground: Centreville (NC), Commons, 14 June 1877 (A); Millsboro (S), Commons, 8 July 1884 (A); near Bloomfield (Ta), Earle, 4056, 16 June 1945 (P, A). June, July. Introd. from Europe.

B. racemosus L.

Rare weed in fields and waste places: near Rising Sun (Ce), True, 5507, 16 July 1938 (P). Adv. from Europe.

B. sterilis L.

Weed in waste places. June, July. Nat. from Europe.

✓ **B. tectorum** L. DOWNY CHESS.

Weed in fields and waste places. June. Nat. from Europe.

Vulpia (Gmel.) Reichenb.

V. octoflora (Walt.) Rydb. var. **tenella** (Willd.) Fern. (*Festuca octoflora* Walt. var. *tenella* (Willd.) Fern. Rhodora 47, 107-108. 1945.)

Common in dry soil, Piedmont and Coastal Plain, chiefly inland. Mid-May to mid-June.

V. Elliottea (Raf.) Fern. (*Festuca myuros* L. Rhodora 47, 106. 1945.) MOUSE-TAIL GRASS.

Frequent in sandy soil of the Coastal Plain. May, mid-June. Nat. from Europe.

Festuca L. FESCUE.

F. elatior L. MEADOW FESCUE.

Frequent; fields, meadows and roadsides. June, July. Nat. from Europe.

F. obtusa Biehler. (*F. nutans* Biehler. Rhodora 47, 199. 1945.)

Frequent, on wooded slopes of the Piedmont and Coastal Plain. Late May, June.

F. paradoxa Desv. (*F. Shortii* Kunth.)

Rare: Conowingo, J. J. Carter, July 1907 (A).

✓ F. rubra L.

Infrequent in coastal marshes; one collection on railroad cinders: under B. & O. R. R. bridge over Lovering Avenue, Wilmington, R. R. Tatnall, 5089, 20 May 1944 (T, A).

Puccinellia Parl. ALKALI GRASS.

✓ P. fasciculata (Torr.) Bicknell. (*P. Borreri* Hitchc.)

Infrequent, in salt marshes along the coasts of Delaware Bay and Atlantic Ocean. May to Sept. Adv. from Europe.

P. distans (L.) Parl.

Rare, in moist soil: south side of Christiana Creek at Market Street, Wilmington, Commons & Tatnall, 30 June 1896 (D). Introd. from Europe.

Glyceria R. Br. MANNA GRASS.

G. acutiflora Torr.

Rare, in swamps and shallow water of New Castle County; last collected in 1890.

G. septentrionalis Hitchc.

Frequent in ponds and ditches, chiefly Coastal Plain. May to July. The older reports of *G. fluitans* belong here.

G. obtusa (Muhl.) Trin.

Frequent in ponds and fresh-water marshes of the Coastal Plain. June to Sept.

G. canadensis (Mx.) Trin. RATTLESNAKE MANNA GRASS.

Rare in bogs and swamps of the Piedmont: swamps along Brandywine Creek above Rockland, Commons, 8 Aug. 1864 (A);

bogs, Ogletown, *Canby*, 1 Aug. 1896 (D); moist roadside $\frac{1}{2}$ mi. n. e. of Ogletown (NC), *R. R. Tatnall*, 4883, 10 June 1941 (T). June, July.

Var. *laxa* (Scribn.) Hitchc. (*G. laxa* Scribn.)

Infrequent in swamps and ditches of the Coastal Plain. June, July.

G. striata (Lam.) Hitchc. (*G. nervata* Trin.)

Common in wet ground and shallow water of the Piedmont and Coastal Plain, at least the northern parts. May, June.

G. pallida (Torr.) Trin.

Frequent in swamps and shallow water, Coastal Plain. May to early July.

Poa L. BLUE GRASS.

P. Chapmaniana Scribner.

Rare in sandy soil: near Townsend (NC), *Commons*, 17 May 1883 (A); roadside, Wachapreague (Ac), *R. R. Tatnall*, 3355, 31 May 1937 (T).

P. annua L. LOW SPEAR GRASS.

Frequent; fields, banks and yards of the northern half of the Peninsula. Introd. from Europe. All summer.

✓ **P. compressa** L. CANADA BLUE GRASS.

Common in fields, woods, dry open roadsides and beach sand, throughout. Nat. from Europe. Mid-May to July.

P. pratensis L. KENTUCKY BLUE GRASS.

Common; open roadsides, fields, meadows and waste ground, throughout. Introd. from Europe. May, June.

P. cuspidata Nutt. (*P. brachyphylla* of Gray's Man. ed. 7.)

Infrequent in rocky woods of the Piedmont. Mid-April to mid-May.

P. trivialis L. ROUGH-STALKED MEADOW GRASS.

Rare, in moist ground: "Meadows," *E. Tatnall*, 25 June 1843 (D); meadows, Ogletown (NC), *Canby*, 25 May 1897 (D); yard, Newark (NC), *C. O. Houghton*, 5 June 1931 (UD). Nat. from Europe. May, June.

P. alsodes Gray.

Rare, in rocky woods of New Castle County: along Beaver Creek, *Commons*, 8 May 1897 (A); Harvey (NC), *Pennell*, 15 May 1909 (A); along Beaver Valley road, $\frac{3}{4}$ mi. w. s. w. of Beaver Valley P. O., *R. R. Tatnall*, 5011, 5 May 1942 (T, A). May.

P. sylvestris Gray.

Frequent in rocky woods of the Piedmont; rare on the Coastal Plain: on Grove Neck (Ce), 5 mi. w. of Cecilton, *R. R. Tatnall*, 2926, 16 May 1936 (T); 6 mi. n. e. of Easton (Ta), *Earle*, 2471, 1 June 1940 (P). Mid-May to mid-June.

P. nemoralis L.

Rare, in meadows and fields of the Piedmont: near Centreville (NC), *Commons*, 17 July 1870 (A), and 20 June 1876, (A).

The southern limit of range for this northern plant.

P. autumnalis Muhl.

Infrequent, in dry woods of the Coastal Plain and Piedmont. Mid-May to mid-June.

Briza L. QUAKING GRASS.**B. minor** L.

Rare, in waste ground: Greenbank (NC), *Commons*, Aug. 1879 (A). Adv. from Europe.

B. media L.

Rare, in waste ground: Wilmington, *Commons*, June 1900 (A).

This and the preceding species are sparingly introduced in waste ground; each collected but once. From Europe.

Eragrostis Beauv. LOVE GRASS.**E. hypnoides** (Lam.) BSP.

Rare: along canal, west of Delaware City (NC), *Canby*, July 1862 (D); gravelly bank of canal, St. Georges (NC), *Commons*, 8 Sept. 1869 (A). Not collected since.

E. capillaris (L.) Nees. LACE GRASS.

Infrequent; in rocky soil of the Piedmont and sandy ground of the Coastal Plain. Late Aug. to early Oct.

E. pilosa (L.) Beauv.

Local: north bank of canal at Pivot Bridge (Ce), *Long*, 41138,

15 July 1933 (A); same locality, *R. R. Tatnall*, 1920, 15 July 1933 (T).

E. pectinacea (Mx.) Nees. (*E. Purshii* Schrad.)

Frequent; in fields and waste places of the Coastal Plain. June to Sept.

E. multicaulis Steud. (*E. peregrina* Wiegand. See *Rhodora* 47, 108. 1945.)

Rare: Wilmington, street near Penna. R. R. station, *Long*, 24 July 1917 (A); Wilmington, sidewalk at Seventh & Harrison Streets *R. R. Tatnall*, 4917, 11 Aug. 1941 (T).

E. megastachya (Koeler) Link. (*E. cilianensis* (All.) Link.)

Common weed of fields, roadsides and waste ground, throughout our area. June to Oct. Introd. from Europe.

E. poaeoides Beauv. (*E. minor* of Gray's Man., ed. 7.)

Occasionally collected in waste ground, New Castle and Sussex Counties. June to Sept. Introd. from Europe.

E. neomexicana Vasey.

Rare: Greenbank (NC), *Commons*, 8 Aug. 1880 (A), and 10 Oct. 1882 (A). Introd. from the West.

E. mexicana (Hornem.) Link.

Rare: Greenbank, *Commons*, 8 Aug. 1880 (A). Introd. from the West.

E. hirsuta (Mx.) Nees.

Rare; sandy roadsides and pine woods of Northampton County: Eastville, grassy roadside, *Fernald & Long*, 5219, 11-13 Oct. 1935, (G, A, T); pines west of Kiptopeke, *Fernald, Long & Fogg*, 5220, 14 Oct. 1935 (P).

Var. *laevivaginata* Fernald.

One collection: sandy bank in Salisbury (Wi), *R. R. Tatnall*, 4762, 13 Oct. 1940 (T, A, G). (Det. Agnes Chase.)

E. spectabilis (Pursh) Steud. (*E. pectinacea* var. *spectabilis* Gray).

Common throughout, chiefly in sandy soil. July to Sept.

E. refracta (Muhl.) Scribn.

Infrequent in open sandy soil of Wicomico and Sussex Counties, where it reaches the northern limit of its range. Aug., Sept.

Distichlis Raf.

D. spicata (L.) Greene. SPIKE GRASS.

Salt meadows; common from southeastern New Castle County southward. Aug. to Oct.

One of the chief constituents of "marsh hay."

Uniola L.

U. paniculata L. SEA OATS.

Collected but once: sandy beach, Kiptopeke (No), *Fernald, Long & Fogg*, 5221, 14 Oct. 1935 (P, T). Sept., Oct.

A southern species, here at the northern limit of its range.

U. latifolia Mx.

Rare, chiefly in alluvial soil: "sandy places on Brandywine Creek," *E. Tatnall*, 20 Aug. 1845 (D); woods along Susquehanna River, $\frac{3}{4}$ mi. s. of Octoraro Station, *R. R. Tatnall*, 4704, 3 Oct. 1940 (T, P, A, G); roadside just s. of Riverton (Wi), *A. V. Smith*, 19 July 1943 (U). Mid-July to early Oct.

U. laxa (L.) BSP.

Common in low woods and sandy soil, throughout. July to Sept.

Dactylis L.

D. glomerata L. ORCHARD GRASS.

Common; fields, roadsides and waste ground. Nat. from Europe. Mid-April to June.

Arundo L.

A. Donax L. GIANT REED.

Established at the border of a swamp near Sharptown (Wi), *Otis*, 2 Nov. 1914 (D).

Cynosurus L. DOGTAIL.

C. cristatus L. CRESTED DOGTAIL.

Rare in fields and waste ground: fields near Centreville (NC), *Commons*, 9 July 1870 (A); lawn, Newark (NC), *C. O. Houghton*, 26 June 1926 (UD). Adv. from Europe.

Phragmites Trin.

P. communis Trin. COMMON REED.

Common; tidal shores, marshes and river banks of the Coastal

Plain as far south as Sussex and Dorchester Counties: bank of Choptank River at Cambridge (Do), *R. R. Tatnall*, 4587, 2 Aug. 1940 (T). Aug. to Oct.

Triodia R. Br.

T. flava (L.) Smyth. (*Tridens flavus* Hitchc.) PURPLETOP.

Common; fields and roadsides, Piedmont and Coastal Plain. Aug. to Oct.

Triplasis Beauv.

✓ **T. purpurea** (Walt.) Chapm. SAND GRASS.

Frequent on maritime sands of the Coastal Plain; one inland station: in a sandpit near bridge over Choptank River, 1 mi. s. of Choptank Mills (K), *R. R. Tatnall*, 5047, 15 Sept. 1942 (T, A). Aug. to Oct.

HORDEAE

Agropyron Gaertner

A. cristatum (L.) Beauv. CRESTED WHEAT GRASS.

Accidentally introduced with grass seed at University of Delaware Experimental farm near Coochs Bridge (NC), *O. A. Pope*, 14 June 1928 (UD).

A. repens (L.) Beauv. QUACK GRASS.

Common weed of roadsides and waste places. Nat. from Europe. June to Sept.

Elymus L. WILD RYE.

E. villosus Muhl. (*E. striatus* of Gray's Man., ed. 7.)

Infrequent, in rocky woods and alluvial meadows of the Piedmont and Coastal Plain. Late June, July.

[**E. canadensis** L. CANADA WILD RYE.

Banks of streams, as reported by *Commons* and by *E. Tatnall*. No specimens have been seen. Probably to be referred to *E. riparius* Wieg.]

E. riparius Wiegand.

Frequent, on banks of streams. July to Oct.

✓ **E. virginicus** L.

Infrequent, on borders of ponds and along streams. June to August.

Var. **glabriflorus** (Vasey) Bush.

Frequent in moist ground along streams, Piedmont and Coastal Plain.

✓ Var. **halophilus** (Bickn.) Wieg.

Shores of the Atlantic Ocean, from Sussex County southward: Rehoboth (S), *Commons*, 15 July 1897 (A); Ocean City (Wo), *Otis*, 29 July 1914 (D); Wachapreague (Ac), *R. R. Tatnall*, 3199, 17 Oct. 1936 (T).

Var. **australis** (Scribn. & Ball) Hitchc.

Moist shaded ground on banks of Brandywine Creek (NC), infrequent.

Hystrix Moench.

H. patula Moench. BOTTLE BRUSH GRASS.

Rocky woods along Brandywine Creek (NC); infrequent, but abundant where it occurs; along Miles Creek (Ta), *Earle*, 2278, 6 July 1940 (P).

Hordeum L. BARLEY.

✓ **H. jubatum** L. SQUIRREL-TAIL GRASS.

Infrequent weed, in fields, waste ground and salt meadows. May to July.

✓ **H. pusillum** Nutt. LITTLE BARLEY.

Frequent; waste places, beaches and salt meadows. May, June.

H. murinum L.

Rare waif from Europe: waste ground, Wilmington, *Commons*, 1 June 1897 (A, D).

Lolium L. RYE GRASS.

L. perenne L.

Common; fields, meadows and waste ground, Piedmont and Coastal Plain. June, early July. Introd. from Europe.

Var. **cristatum** Pers.

Rare, in Wilmington: DuPont and Tulip Streets, *Commons*, 31 May 1899 (D); "Wilmington, rare," *Commons*, 19 June 1899 (A). Adv. from Europe.

L. multiflorum Lam. ITALIAN RYE GRASS.

Infrequent weed from Europe. Late May to early July.

L. temulentum L. DARNEL.

Occasional in cultivated ground. June, July. Introd. from Europe.

Pholiurus Trin.**P. incurvus** (L.) Schinz. & Thell. (*Lepturus filiformis* of authors.)
SICKLE GRASS.

Rare in borders of salt marshes: Bayside (Ac), *Ellis Mears*, 30 May 1882 (A); Magotha (No), *R. R. Tatnall*, 1800, 28 May 1933 (D, A), and 2620, 2 June 1935 (T, P, G); Quinby (Ac), *R. R. Tatnall*, 2643, 3 June 1935 (T).

AVENEAE

Koeleria Pers.**K. cristata** (L.) Pers. JUNE GRASS.

Fields near Centreville (NC), "rare," *Commons*, 11 June 1871 (A).

Sphenopholis Scribn. WEDGEGRASS**S. obtusata** (Mx.) Scribn.

Rocky woods, meadows, serpentine soil; infrequent. June, July.

Var. **pubescens** (Scribn. & Merrill) Scribn.

Infrequent on sands of the coast, from s. e. New Castle County southward. Late May, June.

S. intermedia (Rydb.) Rydb. (*S. pallens* of Gray's Man., ed. 7.
See *Rhodora* 42, 356. 1940.)

Infrequent; moist or rocky woods of New Castle and Cecil Counties; one collection in Accomac County: Wachapreague, *R. R. Tatnall*, 2636, 3 June 1935 (T, A). Mid-May, early June.

S. nitida (Biehler) Scribn.

Frequent in dry or moist woods, Piedmont and Coastal Plain. May, June.

Trisetum Pers.**T. pennsylvanicum** (L.) Beauv. (*Sphenopholis palustris* of Gray's
Man., ed. 7.)

Infrequent; swamps and low ground, Piedmont and Coastal Plain. Late May, June.

Deschampsia Beauv.

D. flexuosa (L.) Trin. COMMON HAIR GRASS.

Frequent; dry wooded slopes and open sandy soil, chiefly Coastal Plain. Mid-May, June.

Aira L. HAIR GRASS.✓ **A. praecox** L.

Rare; dry sandy soil, Sussex County and southward: Millsboro (S), *Long & Bartram*, 4 July 1913 (A); upper beach w. of Kiptopeke (No), *R. R. Tatnall*, 3777-a, 21 May 1938 (T). Nat. from Europe.

A. caryophyllea L. SILVER HAIR GRASS.

Frequent; sandy fields and roadsides of the Coastal Plain. Nat. from Europe. May, June.

✓ **A. capillaris** Host.

Rare; in open sandy soil of the southern part of our area: beach, Cape Charles City, *R. R. Tatnall*, 1779, 27 May 1933 (T, G, A, P); roadside ½ mi. s. of Beaverdam (Wo), *R. R. Tatnall*, 4245, 10 June, 1939 (T, G, P). Nat. from Europe.

Here reaching the northern limit of its range on the eastern Coastal Plain.

Avena L. OATS.**A. fatua** L. WILD OATS.

Rare in cultivated ground: Faulkland (NC), *Commons* in 1884, (A). Introd. from Europe.

A. pubescens Huds.

Fields near Centreville (NC), *Commons*, 3 June 1877 (A). Adv. from Europe.

Arrhenatherum Beauv.**A. elatius** (L.) Mert. & Koch. TALL OAT GRASS.

Infrequent; meadows, roadsides and waste places. May to July. Introd. from Europe.

Var. **bulbosum** (Willd.) Spenner.

Occasional introduction from Europe: Stockley (S), *H. R. Baker*, 16 June 1931 (UD).

Holcus L.

H. lanatus L. VELVET GRASS.

Fields, meadows and roadsides; common in the northern part of the Peninsula; less frequent southward. June. Introd. from Europe.

Danthonia Lam. and DC.

D. spicata (L.) Beauv. WILD OAT GRASS.

Common throughout; dry roadsides, serpentine soil, slopes and pine woods. Mid-April to July.

D. sericea Nutt. DOWNY OAT GRASS.

Infrequent, in dry open sand and sandy woods, Sussex County and southward. Late May to early July.

[D. Alleni Austin.

A "dubious" species, cited by Fernald in *Rhodora* 45, 239-246, as having been collected by *Canby*, in Wilmington.]

AGROSTIDEAE

Calamagrostis Adans. REED GRASS

C. canadensis (Mx.) Beauv. BLUE-JOINT GRASS.

Rare; swamps and wet swales, New Castle County: swale s. of Wilson, *Long*, 27 June 1928 (A).

✓ **C. cinnoides (Muhl.) Barton.**

Common in moist soil; woods, roadsides and salt meadows, from the Fall Line southward to Wicomico County. Late July to Sept.

Ammophila Host. BEACH GRASS.

H✓ **A. breviligulata Fernald. (A. arenaria of Gray's Man., ed. 7.)
AMERICAN BEACH GRASS.**

Deeply rooted in beach sands of the Atlantic Ocean and Delaware and Chesapeake Bays, Coastal Plain. Aug. to mid-Oct.

Agrostis L. BENT GRASS.

A. stolonifera L.

Common; fields, meadows, roadsides, open woods; Piedmont and Coastal Plain southward to Somerset County. June, July.

✓ **A. palustris Huds.**

Rare; salt marshes along the coast; also occasional in meadows

farther inland: salt marsh, Slaughter Beach (S), *Commons*, 12 Aug. 1897 (A); edge of salt marsh, Wachapreague (Ac), *R. R. Tatnall*, 3351, 31 May 1937 (T, P); ½ mi. s. e. of Harmony Mills (NC), *R. R. Tatnall*, 3872, 30 June 1938 (T).

✓ **A. alba** L. RED TOP.

Infrequent in woods, fields and waste places. June to Aug.

A. hyemalis (Walt.) BSP. (*A. antecedens* Bickn.) HAIR GRASS.

Common in meadows and moist open ground of the Coastal Plain; occasional in brackish soil along the coast: Pickering Beach (K), *Larsen*, 887, 8 June 1935 (P). Late May to July.

A. perennans (Walt.) Tuckerm. (Incl. *A. Schweinitzii* Trin.)

Frequent in fields, low ground and open woods, Piedmont and Coastal Plain, southward to Sussex and Talbot Counties. Mid-Aug., Sept.

A. elata (Pursh) Trin.

Rare: peaty clearing s. of Townsend (No), *Fernald, Long & Fogg*, 5212. Cited by Fernald in *Rhodora* 38, 385. 1936.

A. canina L.

Rare: in stony soil near Centreville (NC), *Commons*, July 1870 (A). Introd. from Europe.

Cinna L. WOOD REED GRASS.

C. arundinacea L.

Common in moist woods and swamps, Piedmont and Coastal Plain. Aug., mid-Sept.

Alopecurus L. FOXTAIL GRASS.

A. myosuroides Huds. (*A. agrestis* of Gray's Man., ed. 7.)

Rare, in waste ground: Tatnall's nurseries, Wilmington, *E. Tatnall*, 27 June 1878 (A); near Jessup's Mill, *Tatnall & Commons*, 1 June 1897 (D). Nat. from Europe.

A. pratensis L. MEADOW FOXTAIL.

Rare: field near Centreville (NC), *Commons*, 20 June 1876 (A). Introd. from Eurasia.

A. aequalis Sobol. (*A. aristulatus* Mx.)

Rare: banks of Susquehanna River, Port Deposit (Ce), *I. C. Martindale*, 5 July 1864 (A).

A. carolinianus Walt. (*A. geniculatus* of Gray's Man., ed. 7.)
WATER FOXTAIL.

Rare, in wet places: low, marshy soil, Wilmington, *Commons*, 27 May 1884 (A); Vandyke (NC), wet field near station, *Long*, 24 May 1909 (A).

Polypogon Desf.

P. monspeliensis (L.) Desf. RABBIT'S-FOOT GRASS.

Frequent in saline soil, from Cape Charles northward to Worcester and Wicomico Counties. Late May to July. Nat. from Europe

Phleum L.

P. pratense L. TIMOTHY.

Fields and roadsides; a common escape from cultivation. Introd. from Europe.

Muhlenbergia Schreb.

M. Torreyana (Schult.) Hitchc. (*Sporobolus compressus* of Gray's Man., ed. 7.)

Rare, in moist meadows and pine-barren bogs: Felton (K), *Commons*, 25 Sept. 1873 (A); bogs, Ellendale (S), *Commons*, 27 Sept. 1895 (A); pasture thicket just east of Ellendale, *R. R. Tatnall*, 4743, 12 Oct. 1940 (T, P, G).

M. sobolifera (Muhl.) Trin.

Frequent in rocky woods of the Piedmont. July to Sept.

M. tenuiflora (Willd.) BSP.

Infrequent; rocky slopes (NC). Mid-Aug. to mid-Oct.

M. frondosa (Poir.) Fern. (*M. mexicana* of Gray's Man., ed. 7. See Fernald: *Rhodora* 45, 221-239, 1943.)

Frequent, in woods, fields and moist ground, northern New Castle County. Late Aug., Sept.

M. sylvatica Torr.

Rare, in rocky woods of the Piedmont: Carpenter (NC), *Commons*, 31 Aug. 1897 (A); $\frac{1}{2}$ mi. n. of Mt. Cuba station (NC), *R. R. Tatnall*, 4953, 20 Sept. 1941 (T, A, G).

M. Schreberi Gmel. NIMBLE WILL.

A common weed in door-yards and waste places. Sept. to mid-Oct.

M. capillaris (Lam.) Trin. HAIR GRASS.

Rare, in rocky woods: Wilmington, *Commons*, 6 Nov. 1893 (A).

Sporobolus R. Br. DROP-SEED.

S. vaginiflorus (Torr.) Wood.

Frequent, on dry banks and in sandy soil, including serpentine. Sept., Oct.

S. asper (Mx.) Kunth.

Rare, in dry, sandy soil: "Sussex County," *Canby*, in 1887 (P); Oxford (Ta), *P. M. Novik* in 1908 (teste A. Chase) (U); near Winchester (QA), *A. V. Smith*, (*R. R. Tatnall*, 4741), 12 Oct. 1940 (T).

S. clandestinus (Biehler) Hitchc.

Rare, in dry sand: Millsboro (S), *Commons* in 1880 (A); Newark (NC), *C. O. Houghton*, 11 Sept. 1928 (UD); sandy roadside ½ mi. e. of Blades (S), *R. R. Tatnall*, 3990, 8 Sept. 1938 (T, A, P).

Heleochloa Host.

H. schoenoides (L.) Host.

Infrequent; wharves and waste places, New Castle County; not collected since 1908. Introd. from Europe.

Brachyelytrum Beauv.

B. erectum (Schreb.) Beauv.

Infrequent; rocky woods of the Piedmont. July to mid-Aug.

Oryzopsis Mx. MOUNTAIN RICE.

O. racemosa (J. E. Sm.) Ricker.

Rare; rocky wooded hillsides: Mt. Cuba (NC), *Commons & Tatnall*, 30 July 1874 (A, D); Mt. Cuba, *R. R. Tatnall*, 1196, 27 June 1931 (T).

Stipa L. NEEDLE GRASS.

S. avenacea L. BLACK OAT GRASS.

Infrequent; dry wooded or open sandy soil, chiefly on the Coastal Plain. Late May to mid-June.

Aristida L. TRIPLE-AWNED GRASS.

[**A. tuberculosa** Nutt. The New Castle County record in Keller & Brown, "Flora of Philadelphia and Vicinity," should be referred to *A. oligantha* Mx. (See *E. Tatnall*: MS Catalog.)]

A. dichotoma Mx. POVERTY GRASS.

Common in dry open ground, including serpentine soil, Piedmont and Coastal Plain. Sept., early Oct.

A. oligantha Mx.

Common in dry open soil, Piedmont and Coastal Plain. Late summer.

A. longespica Poir. (*A. gracilis* of Gray's Man., ed. 7.)

Frequent in sandy soil, Piedmont and Coastal Plain. Sept., Oct.

A. lanosa Muhl.

Dry sandy soil; infrequent in Sussex County; rare farther south: pine woods n. w. of Oyster (No), *Fernald, Long & Fogg*, 5182, 14 Oct. 1935 (P); road bank 2 mi. s. w. of Salisbury (Wi), *R. R. Tatnall*, 4370, 11 Aug., 1939 (T, P); 3¼ mi. w. s. w. of Newark (Wo), along Old Mill Branch, *R. R. Tatnall*, 4759, 13 Oct. 1940, (T, G, A); near Salisbury (Wi), *A. V. Smith*.

A. purpurascens Poir.

Frequent in dry sandy soil, chiefly on the Coastal Plain. Late Aug. to mid-Oct.

A. virgata Trin.

Moist sandy soil, Sussex County, rare: dried-up swamps, Georgetown (S), *Commons*, 26 Aug. 1897 (A); meadow-thicket ¼ mi. east of Ellendale (S), *R. R. Tatnall*, 4409, 13 Oct. 1939 (T); same locality, *R. R. Tatnall*, 4742, 12 Oct. 1940 (T, A).

CHLORIDEAE

Diplachne Beauv.**D. maritima** Bicknell. (*Leptochloa fascicularis* (Lam.) Gray.)

Infrequent; brackish meadows near the coast. Aug., Sept.

Eleusine Gaertn.**E. indica** (L.) Gaertn. GOOSE GRASS.

Common weed of gardens and waste ground. Nat. from the Old World.

Cynodon Richard.**C. Dactylon** (L.) Pers. BERMUDA GRASS.

Common weed in fields and open waste places, throughout.

Often planted on railroad embankments as a soil binder. Nat. from Europe.

Spartina Schreb. CORD GRASS.

- ✓ **S. pectinata** Link. (*S. Michauxiana* Hitchc. See Rhodora 35, 258. 1933.) SLOUGH GRASS.

Infrequent; fresh-water swamps and fresh or brackish river shores, Piedmont and Coastal Plain. July, Aug.

- ✓ **S. cynosuroides** (L.) Roth. (*S. polystachya* Beauv.) SALT REED GRASS.

Common; saline shores and marshes of the Coastal Plain. Mid-July to Oct.

- ✓ **S. alterniflora** Lois. (*S. glabra* var. *alterniflora* of Gray's Man., ed. 7.) SMOOTH CORD GRASS.

Common in salt marshes along the coast. July to Oct.

- ✓ **S. patens** (Ait.) Muhl.

Common in salt meadows along the coast. June to Oct.

Var. **junceae** (Mx.) Hitchc.

Saline soil in the southern part of our area; infrequent.

Gymnopogon Beauv.

- G. ambiguus** (Mx.) BSP.

Dry sand, usually in pine woods, Sussex County and southward. Mid-Aug. to mid-Oct.

- G. brevifolius** Trin.

Rare; dry sandy soil: Felton (K), *Canby*, Sept. 1867 (A, P); Ocean City (Wo), *Canby*, 5 Sept. 1878 (A); dry soil near Georgetown (S), *Commons*, 27 Sept. 1895 (A); fencerow $\frac{1}{4}$ mi. e. of Ellendale (S), *R. R. Tatnall*, 4744, 12 Oct. 1940 (T).

PHALARIDEAE

Anthoxanthum L.

- A. odoratum** L. SWEET VERNAL GRASS.

Fields and roadsides; abundant in the Piedmont area; infrequent on the Coastal Plain. April to June. Nat. from Europe.

Phalaris L.

P. canariensis L. CANARY GRASS.

Waste places, Wilmington; no recent collections. The source of the canary seed of commerce. Adv. from Europe.

P. arundinacea L. REED CANARY GRASS.

Swamps and wet depressions in fields and on roadsides; frequent in upper New Castle County; apparently local on the Coastal Plain: coal wharf, Delaware City (NC), *Larsen*, 18 June 1934 (P); $\frac{1}{2}$ mi. n. of Marydel (Ca), *R. R. Tatnall*, 3890, 7 July 1938 (T, P); roadside $\frac{1}{2}$ mi. s. of Coochs Bridge (NC), *R. R. Tatnall*, 5094, 27 May 1944 (T, A). Late May to July.

ORYZAE

Leersia Sw.**L. lenticularis** Mx. CATCHFLY GRASS.

Rare and local: margin of cypress swamp, 2 mi. s. w. of Libertytown (Wo), *A. V. Smith & R. R. Tatnall*, 4020, 9 Sept. 1938 (T, P, A, G). Our only known station, extending the range from southeastern Virginia.

L. oryzoides (L.) Sw. RICE CUT-GRASS.

Common in roadside ditches and on pond margins. Mid-Aug., Sept.

L. virginica Willd. WHITE GRASS.

Common in low woods and moist open places. Aug., Sept.

ZIZANIEAE

Zizania L. INDIAN RICE.**Z. aquatica** L. (*Z. palustris* of Gray's Man., ed. 7.)

Common; tidal marshes, shores and ditches. July to Sept.

PANICEAE

Digitaria Heister.**D. sanguinalis** (L.) Scop. CRAB GRASS.

Common in waste places and cultivated ground. Aug., early Sept. Nat. from Europe.

D. Ischaemum (Schreb.) Muhl. SMOOTH CRAB GRASS.

This and the preceding species are troublesome weeds in lawns and gardens. Sept., early Oct. Nat. from Europe.

[D. serotina Mx.]

Attributed to Delaware by Gray's Manual and by Britton & Brown: Ill. Flora, but no specimen or record has been seen.]

D. filiformis (L.) Koehler.

Frequent in sandy and sterile open ground. Late July to Sept.

Var. *villosa* (Walt.) Fern. (*D. villosa* of Gray's Man., ed. 7.)

Rare: Oldtown Neck, along Chesapeake Bay (No), *Fernald, Long & Fogg*, 5193, 13 Oct. 1935 (P, G).

Leptoloma Chase.**L. cognatum (Schultes) Chase. FALL WITCH GRASS.**

Local, in dry, sandy soil of the Coastal Plain: field along Route 18, 5 mi. s. w. of Lewes (S), *A. V. Smith*, 22 Oct. 1938 (T); roadside 2 mi. e. of Harbeson (S), *R. R. Tatnall*, 4397, 13 Oct. 1939 (T, G); along railroad, ½ mi. n. e. of Snow Hill (Wo), *R. R. Tatnall*, 4760, 13 Oct. 1940 (T, P, A, G).

Axonopus Beauv.**A. furcatus (Flügge) Hitchc.**

Rare: pine woods near Townsend (No), *Fernald, Long & Fogg*, 5207 (P, T); our only known station for this southern species, and probably the northern limit of its range.

Paspalum L.**P. dissectum L.**

Infrequent, in shallow water or wet places of the Coastal Plain. Mid-Sept. to mid-Oct.

P. fluitans, of *E. Tatnall*, "Cat. Plants of New Castle Co., 1860," should probably be referred here.

P. setaceum Mx.

Infrequent, in open sandy soil and sandy woods of the Coastal Plain. July to Oct.

Var. *supinum* (Bosc) Trin. (*P. supinum* Bosc.) *Rhodora*, 390. 1935.)

Rare: fields, Greenbank (NC), *Commons*, 8 Aug. 1883 (A), det. A. Chase; pine woods, Eastville (No), *Fernald & Long*, 5192, 11 Oct. 1935 (T, P).

P. ciliatifolium Mx. var. **Muhlenbergii** (Nash) Fernald. (*P. pubescens* and *P. Muhlenbergii* of Gray's Man., ed. 7.)

Frequent; dry soil, fields and roadsides, chiefly Coastal Plain. July to Sept.

P. dilatatum Poir.

Rare: grassy roadside, Eastville (No), *Fernald & Long*, 5190, 11-12 Oct. 1935 (T, G); pine woods, Kiptopeke (No), *Fernald, Long & Fogg*, 5191, 14 Oct. 1935 (P).

P. laeve Mx.

Common in open ground, Piedmont and Coastal Plain. Aug. to Oct.

Var. **pilosum** Scribn. (*P. plenipilum* of Gray's Man., ed. 7. See *Rhodora* 37, 390. 1935.)

Infrequent; open sandy ground, Coastal Plain. July, Aug.

Var. **circulare** (Nash) W. Stone. (*P. circulare* of Gray's Manual, ed. 7.)

Frequent; open, usually moist, soil of the Coastal Plain. July to Sept.

P. floridanum Mx.

Infrequent in sandy soil, Coastal Plain, especially southward. Aug. to Oct.

Var. **glabratum** Engelm.

Frequent in sandy, usually salt or brackish, soil near the coast. Late Aug. to mid-Oct.

Panicum L. PANIC GRASS.

The sequences of sections and species follow Hitchcock: "Manual of the Grasses of the United States," (1935).

Depauperata

P. depauperatum Muhl.

Frequent in dry sand and on serpentine soil, Piedmont and Coastal Plain. Late May, June.

nearifolium Scribn. var. **Weneri** (Scribn.) Fernald. (*P. Weneri* of Gray's Man., ed. 7.)

One collection: feldspar quarry near Centreville (NC), *Commons*, 6 July 1878 (A).

*Angustifolia***P. aciculare** Desv.

Rare, in the Coastal Plain: Broadkill (S), *F. C. Daigh*, in 1935 (UD); pine woods south of Pepperbox (S), *Long & Tatnall*, 3421, 15 June 1937 (T, A).

P. angustifolium Ell.

Rare, dry sandy pine woods, Sussex County and southward: Frankford (S), *Commons*, 10 Sept. 1875 (A); east of Eastville (No), *Fernald & Long*, 5201, 12 Oct. 1935 (P).

*Dichotoma***P. microcarpon** Muhl.

Common in low woods and swamps, and occasional in dry open soil, Piedmont and Coastal Plain. Mid-June to mid-Sept.

P. mattamuskeetense Ashe.

Infrequent, in low ground of the Coastal Plain. July to mid-Oct.

P. dichotomum L.

Common in rocky woods and dry, open places, Piedmont and Coastal Plain. June to mid-Aug.

Var. **barbulatum** (Mx.) Fernald. (*P. barbulatum* Mx.)

Frequent; same habitats and distribution as the species. Perhaps not deserving varietal rank.

P. yadkinense Ashe.

Infrequent; wooded slopes, valley of Brandywine Creek (NC). June.

P. lucidum Ashe.

Frequent in low woods and bogs of the Coastal Plain. Mid-June to mid-Oct.

*Spreta***P. spretum** Schultes.

Infrequent; meadows and moist sandy soil, Coastal Plain. Mid-June, July.

P. Wrightianum Scribn.

Rare, on the Coastal Plain: moist sandy soil, Ellendale (S), *Long & Bartram*, 1595, 6 July 1913 (A).

Lanuginosa

P. meridionale Ashe.

Frequent in dry sandy soil and moist woods, throughout. Early June to Aug.

Var. **albemarlense** (Ashe) Fernald. (*P. albemarlense* Ashe. Rhodora 36, 76. 1934.)

Rare: swampy woods, Ellendale (S), *Agnes Chase*, 13 June 1916 (A).

P. lanuginosum Ell. (See Fernald: Rhodora 36, 77. 1934.)

Infrequent; sandy pine woods and open sandy soil, Sussex County and southward. Mid-June, July.

Var. **fasciculatum** (Torr.) Fernald. (*P. huachucae* Ashe; *P. tennesseense* Ashe.)

Frequent; woods, swamps and serpentine soil. June, July.

Var. **implicatum** (Scribn.) Fernald. (*P. implicatum* Scribn.)

Infrequent; swamps and sandy woods, Piedmont and Coastal Plain. June to Aug.

Var. **Lindheimeri** (Nash) Fernald. (*P. Lindheimeri* Nash.)

Dry woods, swamps, and sandy or clayey soil; frequent. Mid-June to Aug.

P. auburne Ashe.

Rare; sandy woods: south of Millsboro (S), *Long & Bartram*, 4 July 1913 (A).

P. villosissimum Nash.

Frequent throughout, in dry sandy soil. July to Oct.

Var. **scoparioides** (Ashe) Fernald. (*P. scoparioides* Ashe.)

Rare, in dry soil: Centreville (NC), *Commons*, July 1864 (A); Centreville, *Commons*, 25 June 1873, TYPE (A); Lewes (S), *Long & Bartram*, 5 July 1913 (A).

Columbiana

P. Commonsianum Ashe.

Rare, on coastal sand dunes: Lewes (S), *A. S. Hitchcock*, 18 June 1905 (A); Rehoboth (S), *Fogg*, 16 June 1926 (P); Long Point, 5½ mi. w. of Easton (Ta), *Earle*, 2566, 2 June 1940 (P). June, July.

P. columbianum Scribn.

Rare; dry rocks and sandy woods: Choptank Mills (K), *W. Stone*, 29 May 1904 (A); near Lewes (S), *A. Chase*, 12 June 1906 (A); Point Lookout, ½ mi. n. of Granogue (NC), *Canby*, 30 May 1896 (D). June, July.

Var. **oricola** (Hitche. & Chase) Fern. (*P. oricola* of Gray's Man., ed. 7. See *Rhodora* 36, 79. 1934.)

Frequent, on coastal sand dunes and beaches. June to Aug.

*Sphaerocarpa***P. sphaerocarpon** Ell.

Common on dry or moist soil, serpentine and dune hollows. June to Aug.

P. polyanthes Schult.

Common in damp woods, Piedmont and Coastal Plain. Late June, July.

*Oligosanthia***P. Scribnerianum** Nash.

Infrequent, on sand, gravel and serpentine soil, chiefly in the Piedmont. Mid-June to mid-July.

P. oligosanthos Schult.

Infrequent, in sandy woods, Coastal Plain. May to July.

P. Ravenelii Scribn. & Merrill.

Rare: "Woods, New Castle County," *Canby*, without date, as *P. clandestinum*; this specimen in Chicago Museum of Natural History, det. A. Steyermark.

*Scoparia***P. scoparium** Lam.

Common throughout, in wet ground, swamps and ditches. June to Aug.

P. scabriusculum Ell.

Rare, in wet ground of the Coastal Plain: Millsboro (S), *Commons* in 1884 (A); Salisbury (Wi), *J. J. Carter*, 14 July 1904 (A); wet thicket, Millsboro, *Long & Bartram*, 4 July 1913 (A).

Commutata

P. commutatum Schult.

Frequent throughout, in rocky or sandy woods. June to mid-Aug.

Var. **Ashei** (Pearson) Fern. (*P. Ashei* Pearson. See *Rhodora* 36, 83. 1934.)

Frequent, in dry rocky or sandy woods. Mid-May to Sept.

Latifolia

P. clandestinum L.

Common in moist, or sometimes dry, soil, Piedmont and Coastal Plain. Late May to Sept.

P. latifolium L.

Infrequent, in rocky woods of the Piedmont. June, July.

P. Boscii Poir.

Frequent in woods of the Piedmont; infrequent on the Coastal Plain. Late May to July.

Var. **molle** (Vasey) Hitchc. & Chase.

Frequent in woods of the Coastal Plain. Late May to mid-Aug.

Dichotomiflora

P. dichotomiflorum Mx.

Common weed of cultivated ground and city streets. Late Aug. to early Oct.

Capillaria

P. Gattingeri Nash.

Rare; cultivated ground: edge of field, 4½ miles w. n. w. of Easton (Ta), *Earle*, 3034, 2 Sept. 1940 (P).

P. philadelphicum Bernh.

Rare, in sandy or serpentine soil: dry woods, Collins Beach (NC), *Commons*, 30 Aug. 1879 (A); field by millpond, n. w. of Smyrna (NC), *Long*, 14 Aug. 1908 (A); on serpentine, ½ mi. e. of Mt. Cuba Station (NC), *R. R. Tatnall*, 4727, 8 Oct. 1940 (T, G).

P. capillare L. WITCH GRASS.

Infrequent in waste and cultivated ground. Mid-July to early Oct.

P. miliaceum L. EUROPEAN MILLET.

An occasional escape in waste ground, Wilmington. Adv. from Europe.

*Virgata***P. virgatum** L.

A common plant of salt or brackish shores and marshes of the Coastal Plain. Mid-July to Sept.

Var. **cubense** Griseb.

Infrequent: sand back of dunes, $2\frac{1}{2}$ miles s. of Rehoboth (S), *R. R. Tatnall*, 4749, 12 Oct. 1940 (T). Det. A. Chase.

Var. **spissum** Linder.

Frequent on saline beaches and shores, Coastal Plain. July, Aug.

P. amarum Ell.

Common on maritime shores and dunes, Coastal Plain. Sept., Oct.

P. amarulum Hitchc. & Chase.

Infrequent; shore sands of the Atlantic Ocean, Sussex County and southward. Aug. to mid-Oct.

Often difficult to distinguish from *P. virgatum*.

*Agrostoides***P. agrostoides** Spreng.

Common in swamps, meadows and low pine woods, Piedmont and Coastal Plain. Mid-July to Sept.

Var. **condensum** (Nash) Fernald. (*P. condensum* Nash. See *Rhodora* 36, 74. 1934).

Marshes of the Coastal Plain; infrequent. Aug., Sept.

P. stipitatum Nash.

Frequent in moist soil, Piedmont and Coastal Plain. July to Sept.

P. longifolium Torr.

Infrequent; moist soil of the Piedmont, and marshes of the Coastal Plain. Aug., Sept.

P. anceps Mx.

Moist ground; fields, meadows and roadsides; common in the Piedmont area, less so southward. Late July to mid-Sept.

P. rhizomatum Hitchc. & Chase.

Moist sandy soil, Coastal Plain; apparently rare: pine woods near Capeville (No), *Fernald, Long & Fogg*, 5194, 5195 (P, T).

Verrucosa

P. verrucosum Muhl.

Frequent in moist, sandy soil, throughout our area. Mid-Aug. to Oct.

Hemitoma

P. hemitomom Schultes. MAIDEN CANE.

Ditches and borders of ponds, Sussex and Wicomico Counties; not often collected: Indian River n. of Millsboro (S), *Long & Bartram*, 4 July 1913 (A); Waples Pond, 3 mi. n. of Milton (S), *R. R. Tatnall*, 3413, 15 June 1937 (T); Horsebridge Creek, 6 mi. e. of Salisbury (Wi), *A. V. Smith & R. R. Tatnall*, 3993, 9 Sept. 1938 (T).

A plant of the southern Coastal Plain, here at or near the northern limit of its range.

Sacciolepis Nash.

S. striata (L.) Nash.

Coastal Plain marshes and ponds, rare: Millsboro (S), *S. Brown*, 21 Sept. 1907 (A); pond, Rehoboth (S), *C. S. Williamsom*, 31 Aug. 1908 (A, P); meadow, Fenwick Island (S), *R. R. Tatnall*, 2423, 25 Sept. 1934 (T).

A southern plant, here approaching its northern limit.

Echinochloa Beauv.

E. Crus-galli (L.) Beauv. BARNYARD GRASS.

Common in cultivated and waste ground, Piedmont and Coastal Plain. July to mid-Sept. Nat. from Europe.

E. pungens (Poir.) Rydb. (*E. muricata* (Mx.) Fernald.)

One collection: fields and wastes, Mt. Cuba (NC), *Commons*, 1 Oct. 1897 (A).

E. Walteri (Pursh) Heller.

Common in marshes and ditches, near the coast; apparently absent from the Piedmont. Late Aug. to mid-Oct.

Setaria Beauv.

S. lutescens (Weigel) Hubb. (*S. glauca* of Gray's Man., ed. 7.)
YELLOW FOXTAIL.

Common in waste places and cultivated ground. July, Aug.
Nat. from Europe.

S. geniculata (Lam.) Beauv. (*S. imberbis* of Gray's Man., ed. 7.)

Moist, chiefly saline soil, Coastal Plain; infrequent. July to mid-Sept.

S. verticillata (L.) Beauv. BARBED FOXTAIL.

Frequent in waste places, cultivated ground and city streets.
July to Sept. Nat. from Europe.

Var. **ambigua** (Guss.) Parl.

Sparingly introduced from Europe: yard in Sharptown (Wi),
Otis, 10 July 1914 (D).

S. magna Griseb. GIANT FOXTAIL.

Frequent in fresh and brackish marshes, and often along dikes
and in other disturbed ground; Coastal Plain. Aug., Sept.

S. viridis (L.) Beauv. GREEN FOXTAIL.

A weed of cultivated soil and waste places, throughout. Aug.
to Oct. Nat. from Europe.

S. Faberii Herm. See Fernald: *Rhodora* 46, 57-58. 1944.

A recent introduction from eastern Asia, becoming common in
fields and on roadsides, Piedmont and Coastal Plain. Aug. to Oct.

S. italica (L.) Beauv. HUNGARIAN GRASS.

Occasionally escaped from cultivation, and persisting in waste
places.

Cenchrus L. SAND BUR.

C. longispinus (Hackel) Fernald. (*C. carolinianus* Walt. *C. pauciflorus* of auth. *Rhodora* 45, 387. 1943.) FIELD SAND BUR.

Infrequent; in open sandy soil, Piedmont and Coastal Plain.
Mid-July through September.

C. tribuloides L. DUNE SAND BUR.

Common in sands of the seashore; infrequent inland; Coastal
Plain. Late July to mid-September. *Sandy Co.*

Amphicarpum Kunth**A. Purshii Kunth.**

Locally abundant in open, sandy soil, Sussex County and southward. Late Aug., Sept.

ANDROPOGONEAE

Miscanthus Anderss.**M. sinensis Anderss. EULALIA.**

Escaped from cultivation, and well established in fields and on roadsides in New Castle and Cecil Counties. July to Oct.

Erianthus Mx. PLUME GRASS.

See Fernald: *Rhodora* 45, 246-255. 1943.

E. contortus Ell.

Infrequent, in sandy meadows and pinelands, Sussex County and southward. Aug. to Oct.

E. coarctatus Fern. (*E. brevibarbis* Mx.)

Infrequent; roadsides and ditches, Kent County, Del., and southward. Sept., Oct.

E. saccharoides Mx. (*E. giganteus* (Walt.) Hubbard.)

This southern grass has been collected in Dorchester County, 11 mi. s. w. of Cambridge, *Earle*, 1636, 5 Sept. 1937 (P).

Var. compactus (Nash) Fern. (*E. compactus* Nash.)

Common in ditches, low ground and maritime sands, Coastal Plain. Aug., Sept.

E. ravennae (L.) Beauv. RAVENNA GRASS.

A rare escape from cultivation as an ornamental: sandy roadside at edge of field near Chester River, about 2 miles above Crumpton (QA), *Samuel C. Palmer*, 24 Oct. 1945 (A). Introd. from Europe.

Eulalia Kunth.**E. viminea (Trin.) Kuntze var. *variabilis* Ktze.**

Locally abundant: wet meadow along Pike Creek, 1 mi. e. by s. of Pleasant Hill (NC), *R. R. Tatnall*, 5053, 20 Oct. 1942 (T A, G, P), and below this point on Pike Creek, 1¼ mi. n. of Choate, etc. Also abundant along White Clay Creek (NC), near the Pennsylvania line. Introd. from tropical Asia.

Andropogon L. BEARD GRASS.**A. scoparius Mx.**

Common in dry ground, Piedmont and Coastal Plain. Early Aug. to Oct.

Fernald, in *Rhodora* 37, 143-146, 1935, has described seven varieties of this species, several of which are probably present in our area.

Var. divergens Hackel.

One collection: south of Townsend (No), *Fernald, Long and Fogg*, 5178, 5179, 14 Oct. 1935 (P, G).

A. littoralis Nash. (*A. scoparius* var. *littoralis* (Nash) Hitchc.)
Coastal sands; infrequent. Sept., Oct.

A. Gerardi Vitman. (*A. furcatus* Muhl. *A. provincialis* Lam.)
See *Rhodora* 45, 255-258. 1943.)

Infrequent; dry sandy soil of New Castle County. Mid-Aug. through Sept.

A. ternarius Mx. (*A. argyraeus* Schult.)

In dry, sandy soil; infrequent in southern New Castle and Kent (Del.) Counties; frequent from Sussex County to Cape Charles. Sept. to mid-Oct.

A. virginicus L. (For varieties see Fernald: *Rhodora* 37, 139-143. 1935.)

Common in dry ground; fields and roadsides, throughout. Mid-Aug. to mid-Oct.

Var. hirsutior (Hackel) Hitchc., f. *tenuisphatheus* (Nash) Fern.

In our area known only from southern Northampton County: pine woods south of Townsend, *Fernald, Long & Fogg*, 5180, 5181; *R. R. Tatnall*, 3214, 18 Oct. 1936 (T, P, A).

Var. abbreviatus (Hack.) Fernald. (*A. glomeratus* (Walt.) BSP.)

Pond margins, savannas and wet woods; frequent. Sept., early Oct.

A. Elliottii Chapm.

Frequent in pine woods and dry open ground, Piedmont and Coastal Plain. Sept., Oct.

Var. **projectus** Fernald. See *Rhodora* 37, 139. 1935.

Rare, in the Piedmont: Wilmington, *Canby* in 1861; south of Goat Hill (Ce), *Long & St. John*, 2507, 1 May 1916 (A, P).

Sorghum Moench.

S. halepense (L.) Pers. JOHNSON GRASS.

Open roadsides and waste places; an infrequent escape from cultivation. Aug. to mid-Sept.

Sorghastrum Nash.

S. nutans (L.) Nash. INDIAN GRASS.

Waste places, roadsides and railroad banks; Piedmont and Coastal Plain; frequent. Aug. to mid-Sept.

S. Elliottii (Mohr) Nash.

Collected by *Canby* at Salisbury (Wi), the northern limit of its range, in Sept. 1867 (P).

Manisuris L.

M. rugosa (Nutt.) Ktze. (*Rottboellia rugosa* of Gray's Man., ed. 7.)

Roadside ditches, savannas, and wet places in pine woods, Kent and Sussex Counties, Delaware; local, but abundant where found. Aug. to mid-Oct.

A plant of the southern Coastal Plain, here reaching its northern limit.

TRIPSACEAE

Tripsacum L.

T. dactyloides L. GAMA GRASS.

Frequent along streams of the Coastal Plain, both fresh and brackish; occasional in dry ground, as in rocky woods of the Brandywine valley (NC), and on a vacant lot in Wilmington: Delaware Avenue and Bancroft Parkway, *R. R. Tatnall*, 3155, 2 Sept. 1936 (T, P, A). June to mid-Oct.

CYPERACEAE (SEDGE FAMILY)

Cyperus L. GALINGALE.

C. tenuifolius (Steud.) Dandy. (*Kyllinga pumila* Mx. *C. densicaespitosus* Mattf. & Kükenth. See Fernald: *Rhodora* 47, 113. 1945.)

One known collection: "Moist soil, Baltimore Hundred," (southeastern Sussex County), *Commons*, 10 Sept. 1875 (A).

The northern limit of range for this species.

C. flavescens L. (Incl. var. *poaeformis* (Pursh) Fern. Rhodora 41, 529-530. 1939.)

Frequent in moist ground, in both Piedmont and Coastal Plain provinces. Aug. to early October.

C. diandrus Torr.

Infrequent, in wet soil of the Piedmont and Coastal Plain. Aug., Sept.

C. rivularis Kunth.

Frequent; ditches and banks of streams, Piedmont and Coastal Plain. Mid-Aug., Sept.

C. filicinus Vahl. (*C. Nuttallii* of Gray's Man., ed. 7.)

Frequent in coastal salt marshes; occasional in upland meadows. Aug. to mid-Oct.

C. polystachyos Rottb. var. *texensis* (Torr.) Fern. (*C. microdontus* Torr. See Rhodora 41, 530. 1939.)

Infrequent; stream margins, tidal mud and pine woods, Coastal Plain. Aug. to mid-Oct.

C. sabulosus Mart. & Schrad. (*C. flavescens* of Gray's Man., ed. 7.)

Sandy fields and clearings, in Accomac and Northampton Counties; "a frequent weed" in the latter. Aug. to Oct.

C. compressus L.

Infrequent; sandy soil of the Coastal Plain. Aug., Sept.

C. virens Mx. (*C. pseudovegetus* Steud. See Rhodora 47, 109-110. 1945.)

Common; ditches, low open ground and pine woods, in the Coastal Plain. July to mid-Oct.

A southern species, here near its northern limit.

C. dentatus Torr.

Infrequent; sandy swamps and river shores of the Coastal Plain. Mid-July to Sept.

C. rotundus L.

Rare: sandy shore, Collins Beach (NC), *Commons*, 12 Oct.

1865 (A); weed in garden, Eastville (No), *Fogg*, 10061, 16 Oct. 1935 (P).

A southern species.

C. esculentus L.

Common; low ground, stream banks, beaches and waste places, Piedmont and Coastal Plain. July to mid-Oct.

C. erythrorhizos Muhl.

Infrequent; alluvial soil and sandy shores. Mid-Aug. to mid-Oct.

† **C. odoratus L.** (*C. ferax* of Gray's Man., ed. 7.)

Frequent on stream banks, beaches and low ground, often in brackish soil, Coastal Plain. Aug., Sept.

C. Engelmanni Steud.

Rare, in wet sandy places: Clothier's (Drummond's) Mill (NC), *Commons & Tatnall*, 9 Oct. 1896 (D); border of pond in sandy woods, Savage Neck (No), *Fernald, Long & Fogg*, 5228, 15 Oct. 1935 (A, T).

A northern species.

† **C. strigosus L.**

Common throughout, in ditches, marshes and swampy woods. Aug., Sept.

C. refractus Engelm.

Rare, in dry soil: Bald Friar (Ce), *J. Crawford*, 30 July 1924 (A).

C. lancastrimensis Porter.

Rather rare, in open ground and dry pine woods, Piedmont and Coastal Plain: Grove Neck, near Grove Point (Ce), *Long*, 45022, 13 Oct. 1934 (A); same locality, *R. R. Tatnall*, 3931, 3 Sept. 1938 (T); Kiptopeke (No), dry pine woods, *Fernald, Long & Fogg*, 5229, 12 Oct. 1935 (P); roadside near Rowlandsville (Ce), *R. R. Tatnall*, 5231, 10 Oct. 1945 (T, A).

C. retrofractus L. (*C. hystricinus* Fern., in *Rhodora* 47, 110–113. 1945.)

Rare, in dry sand: Salisbury (Wi), *I. S. Moyer* in 1867 (A); same, *Canby*, Sept. 1887 (P), and July and Aug. 1893 (D); *Wherry & Pennell*, 3–4 Sept. 1925 (A); near Sharptown (Wi), *Otis* in 1914

(D); sand pit west of bridge, 1 mi. s. of Choptank Mills (K), *R. R. Tatnall*, 5048, 15 Sept. 1942 (T), and 5224, 19 Aug. 1945 (T, A).

C. dipsaciformis Fern.

Rare, in rocky woods and open sandy soil: Wilmington, woods along the Brandywine Creek, *Commons*, 28 July 1866 (A); Middletown (NC), *E. B. Bartram*, 16 Aug. 1908 (A).

C. Plukenetii Fern. (*C. retrofractus* of Gray's Man., ed. 7. See *Rhodora* 47, 110-113. 1945.)

Rare, in dry ground: Rehoboth (S), *Commons*, 13 Aug. 1896, (A); Millsboro (S), *S. Brown*, 21 Sept. 1907 (A); city park, Salisbury (Wi), (*A. V. Smith*), *R. R. Tatnall*, 4325, 9 Aug. 1939 (T, P, G)

C. ovularis (Mx.) Torr.

Frequent in both Coastal Plain and Piedmont provinces, chiefly in dry sand, but occasionally in meadows. July to mid-Sept.

C. retrorsus Chapm. (*C. cylindricus* of Gray's Man., ed. 7.)

Frequent; dry fields, sandy pinelands, beaches and dune hollows on the Coastal Plain. Mid-July to Sept.

✓ H **C. Grayii** Torr.

Frequent on sand dunes and beaches of the Coastal Plain. Aug., Sept. *Succow*

C. filiculmis Vahl.

Fields, roadsides and sandy pine woods, chiefly on the Coastal Plain. July to early Oct.

Var. **macilentus** Fern.

Frequent; sandy fields and roadsides. July to early Sept.

Dulichium Pers.

D. arundinaceum (L.) Britton.

Common in shallow water and on pond borders, chiefly on the Coastal Plain. Mid-July to early Oct.

Eleocharis R. Br. SPIKE RUSH.

E. quadrangulata (Mx.) R. & S.

Infrequent; swamps, streams and ponds of the Coastal Plain. Mid-July to Aug.

E. equisetoides Torr.

Rare; in ponds: between Gumboro and Laurel (S), *Commons*, 5 Aug. 1874 (A); millponds, Salisbury (Wi), *Canby*, 21 July 1893 (D); pond 1 mi. s. of Sharptown (Wi), *R. R. Tatnall*, 3139, 22 Aug. 1936 (T, G, A).

E. Robbinsii Oakes.

Rare, ponds and streams, in shallow water: Felton (K), *Canby* in 1874, cited by Svenson in *Rhodora* 31, 154. 1929; Millsboro (S), *Commons*, 8 July 1884 (A); pond w. of station, Milford (S), *Long & Van Pelt*, 21 July 1908 (A).

E. parvula (R. & S.) Link. (*Scirpus nanus* of Gray's Man., ed. 7.)

Frequent; marshes, ditches and salt meadows, Coastal Plain. July, Aug.

E. rostellata Torr.

Rare, ponds and salt marshes of the Coastal Plain: salt marsh, Collins Beach (NC), *Commons*, 20 June 1866 (A, D); Ocean City (Wo), *Commons*, 25 July 1878 (A); Love Creek, near Rehoboth (S), *True*, 20 June 1926 (P).

E. acicularis (L.) R. & S.

Infrequent, in wet soil, New Castle County. July.

E. obtusa (Willd.) Schult.

Common in wet places, Coastal Plain. June to mid-Oct.

Var. *ellipsoidalis* Fern. (See Svenson: *Rhodora* 31, 218. 1929.)

"In quagmires at the borders of ponds on the Coastal Plain": Centreville (NC), *Commons* in 1864 (A); Greenbank (NC), *Commons*, 18 Aug. 1881 (A). Both cited by Svenson, l. c., and both in the Piedmont.

E. Engelmanni Steud.

Infrequent; wet fields and roadsides, Piedmont and Coastal Plain. Mid-June to mid-Sept.

E. olivacea Torr.

Infrequent; wet open places and swampy woods. July to Sept.

E. flavescens (Poir.) Urban.

Rare: Ogletown (NC), *Commons* in 1866; cited by Svenson in *Rhodora* 41, 47. 1939.

E. calva Torr. (*E. palustris* var. *calva* (Torr.) Gray.)

Rare; muddy margins of ponds and streams, Piedmont and Coastal Plain: Greenbank (NC), *Commons*, 13 Aug. 1879 (A); opposite Chestertown (QA), *E. G. Vanatta*, 29 May 1910 (A); river bed, Conowingo (Ce), *Pennell*, 1572, 1 July 1914 (A); bank of Pike Creek, 1 mi. n. of Choate (NC), *R. R. Tatnall*, 5026, 24 June 1942 (T, A).

E. Smallii Britton.

Rare, in fresh-water ponds and swamps of the Coastal Plain: Cherry Island Marsh, Wilmington, *Commons*, 25 June 1897 (A); Bivalve (Wi), *J. J. Carter*, 12 June 1906 (A); boggy margin of cypress swamp, Laurel (S), *Fogg*, 15 June 1926 (P).

E. ambigens Fern. (See Fernald: *Rhodora* 37, 394. 1935; Svenson: *Rhodora* 41, 64. 1939.)

Rare; "sea beaches, eastern shore of Maryland," *Canby* (Herb. N. Y. Bot. Gard., cited by Svenson, l. c.); Vandyke (NC), *R. R. Tatnall*, 899, 30 May 1930 (T).

E. halophila Fern. & Brack.

Rare; saline shores, Delaware and Chesapeake Bays: Slaughter Beach, Thorn Point (S), *Commons*, 16 July 1896 (A); tidal marsh, Plum Creek, 3 mi. w. s. w. of Elkton (Ce), *Long*, 37694, 25 June 1932 (A); Back Creek, 1 mi. n. of Chesapeake City (Ce), *Long*, 41111, 15 July 1933 (A).

E. tenuis (Willd.) Schult.

Common; swampy places and sandy shores, chiefly Coastal Plain. May to early July.

Var. **pseudoptera** (Weatherby) Svenson. *Rhodora* 41, 65. 1939.

Low ground, apparently rare: springy place in field, 1 mi. w. of Stanton (NC), *Randolph*, 107 (G); low ground, Claymont (NC), *Svenson*, 3457, 30 June 1929 (A, P).

E. tricostata Torr.

Rare, in wet soil of the Coastal Plain: Ellendale (S), *C. S. Williamson*, 29 Aug. 1908 (P).

E. intermedia (Muhl.) Schult.

Rare: salt marsh, Cape Henlopen (S), *Commons*, 14 July 1898 (A).

E. microcarpa Torr. var. *filiculmis* Torr. (Incl. *E. Torreyana* Boeckl. See Svenson: *Rhodora* 39, 228. 1937.)

Infrequent; pond margins and ditches of the Coastal Plain. July to Sept.

E. tortilis (Link) Schult. See Svenson: *Rhodora* 39, 245. 1937.

Infrequent, in wet soil, Maryland and southern Delaware. July to early Sept.

Coastal Plain species.

E. tuberculosa (Mx.) R. & S. (Incl. *E. simplex* (Ell.) Dietr.)

Frequent in wet sand, pond margins and low pine woods, Kent County, Del., and southward. June to mid-Sept.

E. melanocarpa Torr.

Rare, in wet sand, Sussex County: "between Gumboro and Laurel," *Commons*, 5 Aug. 1874 (A); Ellendale, *C. S. Williamson*, 9 July 1908 (A, P).

E. albida Torr. See *Rhodora* 39, 271-272. 1937.

Rare, in wet sand: Eastville (No), *Canby*, in 1873 (A); Ocean City (Wo), *Canby*, 23 July 1893 (D); Sandy Hill Landing, Nanticoke River (Wi), *Otis*, 30 June 1915 (D).

Psilocarya Torr. BALD RUSH.

P. scirpoides Torr.

Rare; pond margins and desiccated ponds, Coastal Plain: "Baltimore Hundred," s. e. Sussex County, *Commons*, 10 Sept. 1875 (A); pond 1 mi. s. of Sharptown (Wi), *R. R. Tatnall*, 3138, 22 Aug. 1936 (T); Hudson Pond, 5 mi. s. of Milford (S), *R. R. Tatnall*, 3940, 7 Sept. 1938 (T, G); Salisbury (Wi), *A. V. Smith*, in *Rhodora* 41, 111. 1939.

P. nitens (Vahl) Wood.

Rare, on margins of ponds: Felton (K), *Canby* in 1868 (A, D); edge of millpond near Milford (S), *Otis*, 8 Sept. 1920 (A).

Bulbostylis C. B. Clarke

B. capillaris (L.) Clarke. (*Stenophyllus capillaris* of Gray's Man., ed. 7. See Fernald: *Rhodora* 40, 391-396. 1938.)

Rare, on serpentine soil and on waste ground: serpentine soil near Centreville (NC), *Commons*, Sept. 1866 (A); near Sharptown (Wi), *Otis*, 2 Nov. 1914 (D).

Var. **isopoda** Fernald.

Rare: sand back of dunes, 6½ mi. n. of Ocean City (Wo), R. R. Tatnall, 4653, 4 Aug. 1940 (T). The only known collection.

Var. **crebra** Fernald.

Frequent on railroad ballast and other sterile soil, Coastal Plain. Late Aug., Sept.

Fimbristylis Vahl.

F. castanea (Mx.) Vahl.

Frequent in salt and brackish meadows and marshes, Coastal Plain. Mid-July to Sept.

F. caroliniana (Lam.) Fern. (*F. puberula* (Mx.) Vahl. See *Rhodora* 42, 246. 1940.)

Frequent in salt marshes, Coastal Plain. July to Sept.

F. Baldwiniana Torr. See *Rhodora* 37, 397-398. 1935.

Rare; known from serpentine soil of New Castle County, and sandy river shores of Wicomico County; no recent collections.

F. autumnalis (L.) R. & S.

Frequent in fields, pond borders and dune hollows, Piedmont and Coastal Plain. Aug. to Oct.

Scirpus L. BULRUSH.

S. planifolius Muhl.

Infrequent; on rocky wooded slopes along Brandywine and Red Clay Creeks (NC); not recently collected. April, May.

A northern species.

S. subterminalis Torr.

In water, Sussex and Wicomico Counties; not recently collected. July to Sept.

A northern species.

S. Purshianus Fern. (*S. debilis* Pursh. See *Rhodora* 44, 479-483 1942.)

Infrequent; shores of ponds and streams of the Coastal Plain. Mid-Aug. to early Oct.

H 3 **S. Smithii** Gray

Rare: Holly Oak (NC), *Commons*, 17 Aug. 1896 (A).

A northern plant.

Var. *setosus* Fern.

Rare; Milford (S), *C. S. Williamson*, 1 Sept. 1908 (A).

H H **S. americanus** Pers. CHAIR MAKER'S RUSH.

Common, on maritime shores, and borders of fresh and brackish streams, Piedmont and Coastal Plain. Mid-June to mid-Sept. *S. americanus*

H **S. Olneyi** Gray.

Common in salt marshes; infrequent in shallow fresh water; Coastal Plain. Late June to Sept. *S. Olneyi*

S. etuberculatus (Steud.) Ktze. (*S. cylindricus* (Torr.) Ktze.)
CANBY'S BULRUSH.

Rare: "in streams, Salisbury" (Wi), *Canby*, in 1864 (D) and Sept. 1894 (A); same, *Commons*, 31 Aug. 1863 (A).

Reaches the northern limit of its range in Sussex County.

H **S. validus** Vahl var. *creber* Fern, (*S. validus* of Gray's Man., ed. 7. See *Rhodora* 45, 283. 1934.) GREAT BULRUSH.

Common in ponds, streams and tidal mud, Piedmont and Coastal Plain. June to Aug.

S. fluviatilis (Torr.) Gray. RIVER BULRUSH.

Frequent on river shores and salt margins, Piedmont, and Coastal Plain as far south as Worcester County, where it appears to reach its southern limit. June to Sept.

S. robustus Pursh. SALT MARSH BULRUSH.

Common in salt marshes of the Coastal Plain. July to Sept.

S. novae-angliae Britton.

Rare: brackish marsh, Augustine Beach (NC), *Pennell*, 7809, 3 Aug. 1916 (A).

S. expansus Fern. (*S. sylvaticus* of Gray's Man., ed. 7. See *Rhodora* 45, 293-295. 1943.)

Not often collected: swamp near Centreville (NC), *Commons*, 22 July 1868 (A); boggy soil along Pike Creek (NC), *Canby*, 28 July 1896 (D); Conowingo (Ce), *Long & Bartram*, 1 June 1913 (A); 1½ mi. s. w. of Elkton (Ce), *Benner*, 25 June 1932 (A).

S. atrovirens Willd.

Common, in swamps, meadows and wet roadsides, chiefly in the Piedmont. June to Aug.

Var. **georgianus** (Harper) Fern. (*S. georgianus* of Gray's Man., ed. 7.)

Infrequent; same range as the species.

S. polyphyllus Vahl.

Infrequent; swamps and meadows, Piedmont and Coastal Plain. July to Sept.

S. cyperinus (L.) Kunth. WOOL-GRASS.

Frequent, in fresh or salt meadows and marshes, chiefly Coastal Plain. Mid-July to early Oct.

Var. **condensatus** Fern.

One known collection: swampy ground along the railroad, $\frac{1}{2}$ mi. s. e. of Harmony (NC), *R. R. Tatnall*, 4294, 22 July 1939, (T. G.).

H **S. rubricosus** Fern. (*S. Eriophorum* Mx. See *Rhodora* 47, 124. 1945.) WOOL-GRASS.

Same habitats as *S. cyperinus*, but apparently less common. Mid-Aug. to Sept.

Eriophorum L. COTTON GRASS.**E. gracile** Koch.

Rare, in bogs, New Castle County: Thompson's Swamp, $1\frac{1}{2}$ mi. n. e. of New Castle, *E. Tatnall*, in 1858 (D); McCrone's Swamp, near Farnhurst, *Commons*, 20 June 1876 (A); in sphagnum, e. of Vandyke, *Commons*, 7 June 1881 (A).

E. virginicum L.

Infrequent; swamps and ditches, Piedmont and Coastal Plain. Aug., Sept.

Fuirena Rottb.

F. pumila Torr. (*F. squarrosa* Mx. See *Rhodora* 40, 396-398. 1938.)

Infrequent; swampy woods and sandy shores, Sussex County and southward. Aug. to mid-Oct.

F. squarrosa Mx. (*F. hispida* Ell. See above reference.)

Frequent in swamps, ditches and salt marshes, Sussex County and southward; rare in the Coastal Plain area of New Castle County: Kiamensi, *Commons*, 17 Aug. 1897 (A); "Glasgow Bog," $\frac{3}{4}$ mi. n. e. of Glasgow Station, *R. R. Tatnall*, 1490, 24 July 1932 (T, G). Mid-July to Sept.

Rhynchospora Vahl. BEAK RUSH.

R. corniculata (Lam.) Gray. HORNED RUSH.

Rare, in swamps and meadows: upland meadows, Ellendale (S), *Canby*, Aug. 1874 (A); low ground near Cypress Creek (s. w. NC), *Canby*, 5 Sept. 1898 (D, A); cypress swamp, 2 mi. s. w. of Libertytown (Wo), *R. R. Tatnall*, 4651, 4 Aug. 1940 (T, A). July to Oct.

R. macrostachya Torr. HORNED RUSH.

Frequent in meadows and on margins of ponds; occasionally found in tidal mud. Aug., Sept.,

R. inundata (Oakes) Fern. (*R. macrostachya* var. *inundata* of Gray's Man., ed. 7.)

Rare, in water: Waples Pond, 3 mi. n. of Milton (S), *R. R. Tatnall*, 2765, 31 Aug. 1935 (T, G).

R. globularis (Chapm.) Small var. *recognita* Gale. (*R. cymosa* of Gray's Man., ed. 7. See *Rhodora* 46, 243-249. 1944.)

Infrequent, in low ground, Piedmont and coastal Plain. July to mid-Aug.

R. Torreyana Gray.

Rare, in swamps and wet meadows, Coastal Plain: near Laurel (S), *Commons*, 5 Aug. 1874 (A); Ocean City (Wo), *Canby*, 23 July 1893 (D); thicket $7\frac{1}{2}$ mi. s. e. of Salisbury (Wi), (*A. V. Smith*), *R. R. Tatnall*, 4371, 11 Aug. 1939 (T, P, G).

R. inexpansa (Mx.) Vahl.

Rare: wet depression in pine woods, just s. of Townsend (No), *Fernald, Long & Fogg*, 5246, 14 Oct. 1935 (P, T); same locality, *R. R. Tatnall*, 3216, 18 Oct. 1936 (T).

A species of the southern states, here at its northern limit.

R. fusca (L.) Ait. f.

Rare, in meadows, glades and pine barrens, Sussex County: pine barrens near Millsboro, *Commons*, 18 June 1875 (A); "glades

south of Lewiston" (Lewes), *Canby*, 13 July 1878 (A); upland meadows, Ellendale, *Canby*, Aug. 1890 (D).

The southern limit of this northern species.

***R. filifolia* Gray.**

Rare: along railroad, east of Ellendale (S), *Commons*, 17 Aug. 1899 (A).

***R. gracilentia* Gray.**

Infrequent, in low pine woods and pine barrens, Coastal Plain. July to mid-Oct.

***R. oligantha* Gray.**

Rare, in bogs: 1½ mi. s. of Lewes (S), *Canby*, July 1878 (A, D); near Lewes, *Commons*, 26 Aug. 1895 (A).

Near the northern limit of range for this southern species.

***R. pallida* Curtis.**

Rare: bog in pines, near Laurel (S), *Commons*, 19 Aug. 1880 (A); near Salisbury (Wi), *Canby*, cited by Gale in *Rhodora* 46, 166. 1944.

Coastal Plain species.

***R. alba* (L.) Vahl.**

Infrequent, in bogs and swamps of the Coastal Plain, chiefly in Sussex County. Aug., Sept.

***R. Knieskernii* Carey.**

Rare: swamp near Gumboro (S), *Commons*, 5 Aug. 1874 (A); "Baltimore Hundred" (S), *Commons*, 10 Sept. 1875 (A).

***R. glomerata* (L.) Vahl.**

Rare, in moist soil: near railroad bridge, Smyrna (NC), *Commons*, 10 Oct. 1866 (A); Seaford (S), *Commons*, 10 Aug. 1878 (A); near Slaughter Beach (S), *Commons*, 12 Aug. 1897 (A); pine woods s. of Townsend (No), *Fernald, Long & Fogg*, 5243, 14 Oct. 1935 (P).

***R. capitellata* (Mx.) Vahl.**

Common in moist soil, Piedmont and Coastal Plain. Mid-July to mid-Sept.

***R. chalarocephala* Fern. See *Rhodora* 42, 426. 1940.**

Rare: bog along railroad, 2 mi. s. of Lewes (S), *Commons*, 15

Aug. 1895 (A); abandoned pond near Sharptown (Wi), *O' Neill*, 7430, cited by Gale in *Rhodora* 42, 112. 1944.

R. microcephala Britton.

Rare: Salisbury (Wi), *Commons*, 28 Sept. 1863 (A); along Indian River, Millsboro (S), *S. Brown*, 21 Sept. 1907 (A).

R. cephalantha Gray. (*R. axillaris* of Gray's Man., ed. 7.)

Rare, in moist sandy soil of the Coastal Plain: Ellendale and Redden (S), several collectors; edge of swamp in Salisbury (Wi), *A. V. Smith*, in *Rhodora* 41, 111. 1939.

Cladium R. Br. TWIG RUSH.

C. mariscoides (Muhl.) Torr.

Frequent; marshes, pond borders and dune hollows, southern Kent (Del.) and Sussex Counties, and southward. July to Sept.

Scleria Bergius. NUT RUSH.

(See Fernald: *Rhodora* 38, 397-398. 1936.)

S. triglomerata Mx.

Infrequent in meadows and moist pine woods of the Coastal Plain; rare in the Piedmont: moist soil, Centreville (NC), *Commons* 14 Aug. 1878 (A). July, early Aug.

S. minor (Britton) W. Stone.

Rare, in moist pine woods: 1½ mi. n. w. of Colbourne (Wo), *R. R. Tatnall*, 4627, 3 Aug. 1940 (T).

S. nitida Willd.

Rare, in dry woods, Coastal Plain and Piedmont provinces: meadow, Centreville (NC), *Commons* in 1863 (A); Salisbury (Wi), *Canby*, Sept. 1894 (D).

S. pauciflora Muhl.

Infrequent; meadows; also dry sand and serpentine soil, Piedmont and Coastal Plain. Late June to Aug.

S. reticularis Mx.

Infrequent; meadows, swamps and ditches, chiefly Coastal Plain. Seems not to have been collected since 1899. Aug., Sept.

S. Muhlenbergii Steud. (*S. setacea* of Gray's Man., ed. 7. See Fernald: Rhodora 45, 296-297. 1943.)

Rare, in pine barrens and swampy woods of the Coastal Plain: Felton (K), *Commons*, 25 Sept. 1873 (A); Cedar Neck (S), *Commons*, 10 Sept. 1875 (A); swamp 2 mi. s. of Lewes (S), *Commons*, 26 Aug. 1895 (A); swampy woods s. of Kendall Grove (No), *Fernald, Long & Fogg*, 5247, 13 Oct. 1935 (P, T).

Carex L. SEDGE.

The sections and sequences of species here given follow the treatment of Mackenzie in North American Flora 18, 1-478. (1931-1935).

Fruiting dates refer to the times when the perigynia have reached full development; previous to this, identification of species is often difficult or impossible.

Arenariae

C. arenaria L.

Rare, in sand of the upper part of the beach of Chesapeake Bay, in Northampton County: sandy woods among dunes, Savage Neck, *Fernald & Long*, 5249, 11 Oct. 1935 (T); west of Kiptopeke, *Fernald, Long & Fogg*, 5250, 14 Oct. 1935 (T); same locality, *R. R. Tatnall*, 3775, 21 May 1938 (T, P, A); Cape Charles, s. of Kiptopeke, *F. R. Fosberg*, 14636, 18 Apr. 1938 (P).

Bracteosae

C. retroflexa Muhl.

Infrequent; dry woods of the Piedmont. May, June.

C. rosea Schk.

Infrequent; rich woods of the Piedmont and Coastal Plain. Mid-May to mid-June.

C. convoluta Mack. (*C. rosea* of some authors, not Schkuhr.)

Infrequent, in woods, chiefly of the Coastal Plain. May to July.

C. radiata (Wahl) Dewey. (*C. rosea* var. *radiata* of Gray's Man., ed. 7.)

Rare; woods and thickets: Stanton (NC), *Canby*, 13 June 1896 (D); Wilmington, *True*, 24 June 1926 (P).

C. cephalophora Muhl.

Infrequent; in dry woods and on serpentine soil. Late May, June.

C. Leavenworthii Dewey.

Rare; in dry open woodlands: near Unionville (Ta), Earle, 3606, 25 July 1942 (A).

C. mesochorea Mack.

Rare, in dry open places: 3½ mi. w. n. w. of Easton (Ta), Earle, 3524, 9 May 1942 (P).

C. spicata Huds. (*C. muricata* L. ?)

Infrequent; dry sandy soil, fields and pond margins. June. Locally nat. from Europe.

C. Muhlenbergii Schk.

Frequent; woods, stream banks and open sandy soil, Piedmont and Coastal Plain. June to mid-July.

Var. **enervis** Boott. (*C. plana* Mack.)

Infrequent; dry rocky hillsides of the Piedmont; also marshy ground on the Coastal Plain. May, June.

C. sparganioides Muhl.

Infrequent; rich rocky woods, Piedmont. May, June.

*Multiflorae***C. annectens** Bicknell. (*C. vulpinoidea* var. *annectens* Farwell.)

Infrequent; fields and roadsides, chiefly Coastal Plain. Mid-May to early July.

C. vulpinoidea Mx.

Common throughout, in swamps, ditches and wet meadows. June to mid-July.

*Vulpinae***C. stipata** Muhl.

Infrequent; swamps and meadows, Piedmont and Coastal Plain. Mid-May, June.

Var. **maxima** Chapm. (*C. uberior* (Mohr) Mack.)

Infrequent; swamps, chiefly Coastal Plain. June.

C. laevivaginata (Kükenth.) Mack.

Infrequent; river swamps and damp woods of the Coastal Plain. May, June.

*Heleonastes***C. trisperma** Dewey.

Rare; in bogs, usually in sphagnum. June. Apparently not collected since 1881.

C. canescens L. var. **disjuncta** Fernald.

Frequent; swamps, ditches and pond margins, Sussex County. and northward on the Coastal Plain. May, June.

*Stellulatae***C. exilis** Dewey.

Rare; "bogs and acid soils, Labrador to Delaware, mostly near the coast" (Mackenzie): Cedar swamp, Millsboro (S), *Commons*, 18 June 1875 (A). See also Fernald: *Rhodora* 44, 244. 1942.

C. seorsa Howe.

Infrequent; swamps and low woods, Coastal Plain. Mid-May to early June.

C. interior Bailey. (*C. scirpoides* of Gray's Man., ed. 7.)

Rare: moist roadside, State Road Station (NC), *True*, 18 June 1926 (P); our only known collection.

C. Howei Mack. (*C. scirpoides* var. *capillacea* (Bailey) Fernald.)

Infrequent; moist woods and stream margins, Piedmont and Coastal Plain. Mid-May, June.

C. incompta Bicknell. (*C. sterilis* Willd., in part.)

Infrequent; in bogs, chiefly of the Coastal Plain. May, June.

C. atlantica Bailey. (*C. sterilis* Willd., in part.)

Infrequent; bogs and low woods, Piedmont and Coastal Plain. Late May, June.

C. angustior Mack.

Rare: swamp near Centreville (NC), *Commons*, 6 June 1867 (A); margin of pond, Rehoboth (S), *True*, 18 June 1926 (P). No other known collection.

*Deweyanae***C. bromoides** Schk.

Rare; in swamps: Centreville (NC), *Commons*, in 1864 and 1878 (A); apparently not collected since. June.

Ovales

C. scoparia Schk.

Frequent; moist soil, chiefly on the Coastal Plain. June, July.

C. normalis Mack. (*C. mirabilis* Dewey var. *perlonga* Fernald.)

Infrequent; meadows and thickets of the Piedmont. June, July.

C. festucacea Schk.

Frequent in low woods, Coastal Plain and Piedmont areas. May, June.

C. brevior (Dewey) Mack. (*C. festucacea* var. *brevior* of Gray's Man. ed. 7.)

One collection: Dixon's quarry, near Wilmington, F. M. Jones, 3 June 1927 (P); locality now destroyed.

C. Bicknellii Britton.

One collection: on serpentine near Centreville (NC), *Commons*, 26 May 1863 (A).

C. hormathodes Fernald.

Frequent; in salt or brackish marshes, Coastal Plain. Mid-May, June.

C. Richii (Fernald) Mack. (*C. hormathodes* var. *Richii* of Gray's Man., ed. 7.)

Rare, in moist soil: early collections near Wilmington and near Townsend (NC); ditch, Vandyke (NC), Long, 24 May 1909 (A).

C. Longii Mack. (*C. albolutescens* of some authors, not Schw.)

Common; coastal sands, low woods and pond margins of the Coastal Plain. May to mid-July.

C. silicea Olney.

Infrequent, on sands of the seashore, in Sussex and Worcester Counties. June, July.

A northern species, here at the southern limit of its range.

C. straminea Willd. ("C. albolutescens Schw.")

Frequent, in low, open ground and moist woods, Coastal Plain. May, June.

C. alata Torr.

Frequent; damp woods, marshy ground, and stream banks, Coastal Plain. June, early July.

C. tribuloides Wahl.

Frequent, in low ground, chiefly Coastal Plain. June, July.

C. cristatella Britton. (*C. cristata* of Gray's Man., ed. 7.)

Rare: meadow near Centreville (NC), *Commons*, Aug. 1873 (A); thickets along Mill Creek (NC), *Canby*, 16 June 1897 (D); river flats, Conowingo (Ce), *J. Crawford*, 31 July 1924 (A).

*Polytrichoideae***C. leptalea** Wahl.

Infrequent; in swamps, New Castle and Sussex Counties; not recently reported. June.

Var. **Harperi** (Fernald) Stone. (*C. Harperi* Fernald.)

Infrequent; swamps and wet woods, Coastal Plain. May, June.

*Phyllostachyae***C. Willdenowii** Schk.

Rare; northern New Castle County, in dry woods and on serpentine soil. June. Not reported since 1897.

*Montanae***C. artitecta** Mack. (*C. varia* Muhl.)

Common; dry woods or open places, chiefly in the Piedmont. April to June.

C. Emmonsii Dewey

Infrequent; dry woods and low ground, chiefly Coastal Plain. Late April, May.

C. nigromarginata Schw.

Frequent on serpentine soil and dry rocky hillsides of the Piedmont, and on dry sandy soil of the Coastal Plain. Mid-April, May.

C. communis Bailey.

Common; rocky woods of the Piedmont. April, May.

C. pennsylvanica Lam.

Frequent; rocky woods, serpentine soil and pond margins, in both Piedmont and Coastal Plain. Mid-April to June.

C. umbellata Schk.

Rare; dry rocky or sandy soil: "Brandywine hills" (NC), *Canby*, April 1866 (A); near Townsend (NC), *Commons*, 17 May 1883 (A); Bald Friar (Ce), *Long*, 42982, 6 May 1934 (A).

C. rugosperma Mack. (*C. umbellata* of many authors, not Schk.)

Rare; dry wooded slopes: near Centreville (NC), *Commons*, 7 May 1864 (A); Octoraro Creek, above Cecil Paper Mills (Ce), *Long & St. John*, 2517, 1 May 1916 (A); 1 mile w. of Betterton (Ke), *F. S. Fender*, 1228, 10 April 1936 (P).

C. tonsa (Fernald) Bicknell. (*C. umbellata* var. *tonsa* Fernald.)

Rare; in sandy soil of the Coastal Plain: clearings, Milford (S), *Canby*, 18 April 1888 (D); oak scrub n. e. of Elk Neck (Ce), *Long*, 54296, 19 May 1940 (A); Middle Neck (Ce), bank of Great Bohemia Creek, *Long*, 7 May 1932 (A).

*Digitatae***C. pedunculata** Muhl.

Rare; rocky wooded banks of Brandywine Creek, Wilmington: Wills Rock, *Canby*, May 1862 (D); above Wilmington, *Commons*, 3 May 1865 (A, D).

*Triquetrae***C. hirtifolia** Mack. (*C. pubescens* Muhl.)

Infrequent; wooded slopes of the Piedmont. Late May, June.

× **C. Sullivantii** Boott. (*C. hirtifolia* × *C. gracillima*.)

Rare: moist banks, Stanton (NC), *Commons*, 3 June 1884 (A).

*Paniceae***C. tetanica** Schk.

One collection: meadow s. of Sylmar (Ce), *Long*, 32107, 2 May 1925 (A).

Northern species.

C. Meadii Dewey. (*C. tetanica* var. *Meadii* of Gray's Man., ed. 7.)

Rare: known only from a swamp n. of Rockland (NC), *Commons*, 29 June 1893 (A).

C. polymorpha Muhl.

One known collection: Leslie (Ce), *J. Crawford*, 10 May 1891, (A).

*Laxiflorae***C. platyphylla** Carey.

Rare: rich wooded slope, Grove Neck, 6 mi. w. of Cecilton (Ce), *Benner*, 7101, 16 May 1936 (A), *R. R. Tatnall*, 2925, 16 May 1936 (T, P, A).

C. abscondita Mack. (*C. ptychocarpa* of Gray's Man., ed. 7.)

Frequent; in woods of the Coastal Plain. Late May, June.

C. digitalis Willd.

Infrequent; woods and thicket, Piedmont and Coastal Plain. Mid-May, June.

C. laxiculmis Schw.

Frequent in rich woods of the Piedmont area; rare on the Coastal Plain: near Leipsic (K), *R. R. Tatnall*, 2567, 26 May 1935 (A, P, D, T); 6 mi. n. e. of Easton (Ta), *Earle*, 2470, 1 June 1940 (P); near Trappe (Ta), *Earle*, 2770, 5 July 1940 (P). Late May, June.

C. styloflexa Buckley. (*C. laxiflora* var. *styloflexa* of Gray's Man., ed. 7.)

Infrequent; damp woods, Piedmont and Coastal Plain. Late April to June. Our specimens are all from New Castle and Sussex Counties.

C. laxiflora Lam. (Including *C. heterosperma* Wahl., and *C. anceps* Muhl.)

Common in rocky woods of the Piedmont; frequent in woods of the Coastal Plain. Late May, June.

C. striatula Mx. (*C. laxiflora* var. *divaricata* Bailey.)

Rare; wooded banks, Piedmont and Coastal Plain: Wilmington, *Canby*, May 1893 (D); near Trappe (Ta), *Earle*, 2399, 11 May 1940 (P); along Pike Creek n. of Choate (NC), *R. R. Tatnall*, 4495, 18 May 1940 (T, A).

C. albursina Sheldon. (*C. laxiflora* var. *latifolia* of Gray's Man., ed. 7.)

Rare; rich woods along the Susquehanna River: wooded valley, Conowingo (Ce), *Fogg*, no. 1930, 15 May 1927 (P); woods 1¼ mi. w. of Rowlandsville (Ce), *R. R. Tatnall*, 4497, 28 May 1940 (A, G, T).

C. blanda Dewey. (*C. laxiflora* var. *varians* Bailey.)

Frequent in rocky woods of the Piedmont province; rare in woods of the Coastal Plain: near Choptank Mills (K), *F. M. Jones*, 21 June 1927 (P); 6 mi. n. e. of Easton (Ta), *Earle*, 2480, 1 June 1940 (P); marsh w. of Taylor's Bridge (NC), *Long*, 58236, 10 May 1942 (A).

C. gracilescens Steud. (*C. laxiflora* var. *gracillima* of Gray's Man., ed. 7.)

Rare; meadows and thickets in the Piedmont: Greenbank (NC), *Commons* in 1880 and 1885 (A).

*Granulares***C. granularis** Muhl.

Rare; meadows and low woods, Piedmont and Coastal Plain: near Yorklyn (NC), *Commons* in 1875 (A); Greenbank (NC), *Commons* in 1884 (A); Windmill Branch, s. of Easton (Ta), *Earle*, 3205, 17 May 1941 (P).

*Oligocarpae***C. oligocarpa** Schk.

Frequent in woods and meadows of the Piedmont; rare on the Coastal Plain: Frankford (S), *Commons*, 18 June 1875 (A). May, June.

*Griseae***C. conoidea** Schk.

Rare; in meadows of the Piedmont: near Centreville (NC), *Commons*, June 1864 (A); near Ashland (NC), *Commons*, 18 June 1874 (A).

C. amphibola Steud. var. *rigida* (Bailey) Fernald. See *Rhodora* 44, 311, 1942. (*C. grisea* var. *angustifolia* of Gray's Man., ed. 7.)

Rare; in dry soil, Piedmont and Coastal Plain: Greenbank, (NC), *Commons* in 1884 and 1885 (A); Brandywine Park, Wilmington, *True*, 26 June 1926 (P); near Choptank Mills (K), *F. M. Jones*, 21 June 1927 (P).

C. grisea Wahl.

Frequent in woods and meadows, Piedmont and Coastal Plain. Mid-May, mid-June.

C. glaucodea Tuckerm.

Frequent in woods and meadows and on serpentine soil of the Piedmont; infrequent on the Coastal Plain. May, June.

*Gracillimae***C. gracillima** Schw.

Frequent in woods and meadows of the Piedmont; rare on the Coastal Plain: Frankford (S), *Commons*, 18 June 1875 (A). May, June.

C. prasina Wahl.

Infrequent; meadows, wet woods and stream banks of the Piedmont. Mid-May, June.

C. Davisii Schw. & Torr.

Rare; along Brandywine Creek near Wilmington: above Wilmington, *Commons*, 20 June 1874 (A); Brandywine Park, *Canby*, 27 May 1899 (D); at west end of Smith's Bridge, $\frac{1}{2}$ mi. n. e. of Granogue, *R. R. Tatnall*, 5012, 28 May 1942 (T, A).

× **C. aestivaliformis** Mack. (*C. gracillima* × *C. aestivalis* (L. H. Bailey)).

Rare; woods in northern New Castle County, *Commons* in 1865 and 1866. June.

*Sylvaticae***C. oblita** Steud. (*C. venusta* Dewey var. *minor* of Gray's Man., ed. 7.)

Rare; bogs and swamps of the Coastal Plain: Millsboro (S), *Commons* in 1875 (A); Cypress Swamp near Frankford (S), *Commons* in 1875 (A).

C. debilis Mx.

Frequent; woods, swamps and pond margins, Piedmont and Coastal Plain. May, June.

A southern species.

*Longirostres***C. Sprengelii** Dewey. (*C. longirostris* Torr. of Gray's Man., ed. 7.)
One collection: Wilmington, *J. H. Brakeley*, without date (A).
A northern species

Virescentes

C. Swanii (Fernald) Mack. (*C. virescens* var. *Swanii* of Gray's Man., ed. 7.)

Frequent throughout, in dry or damp woods, and among coastal dunes. May, June.

C. virescens Muhl.

Infrequent in dry rocky woods of the Piedmont; rare on the Coastal Plain: roadside between Snow Hill and Pocomoke City (Wo), *True*, 21 June 1926 (P); 6 mi. e. n. e. of Easton (Ta), *Earle*, 2445, 31 May 1940 (P). June, July.

C. complanata Torr.

Infrequent; dry woods and open serpentine outcrops of the Piedmont, and pine woods of the Coastal Plain. May, June.

C. hirsutella Mack. (*C. hirsuta* Willd.)

Infrequent; dry woods and serpentine soil of the Piedmont, and dry sand of the Coastal Plain. June.

C. caroliniana Schw.

Infrequent; dry sandy soil, serpentine, meadows and woods, Piedmont and Coastal Plain of New Castle and Cecil Counties. June, July.

C. Bushii Mack. (*C. hirsuta* var. *cuspidata* Dewey, in Wood, Class Book.)

Rare; fields, woods and meadows, Piedmont and Coastal Plain: near Wilmington, *Canby*, 18 June 1901 (A); ditch bank s. of Ellendale (S), *True*, 18 June 1926 (P); pond, Rehoboth (S), *True*, 19 June 1926 (P).

Hirtae

C. Walteriana Bailey. (*C. striata* Mx. var. *brevis* Bailey, of Gray's Man., ed. 7.)

Frequent in meadows, swamps and pine-barren bogs of the Coastal Plain; rare in the Piedmont: swamp near Centreville (NC), *Commons*, 14 June 1868 (A). June, July.

C. lanuginosa Mx.

Infrequent; meadows and swamps of New Castle County, in both Piedmont and Coastal Plain areas. Not reported since 1897. June.

C. vestita Willd.

Infrequent, in sandy woods and swamps, New Castle and Cecil Counties. Late May to early July.

*Anomalae***C. scabrata** Schw.

Rare, in swampy woods of the Piedmont: near Centreville (NC), *Commons* in 1864 (A); Conowingo (Ce), *Long & Bartram*, 1 June 1913 (A).

*Pendulinae***C. Joorii** Bailey. (*C. macrokolea* Steud. of Gray's Man., ed. 7.)

Rare; margins of cypress swamps: 20 mi. s. w. of Cambridge (Do), *M. A. Chrysler*, 26 Aug. 1904 (A); Vienna (Do), *C. P. Smith*, 13 Aug. 1913 (A); 2 mi. s. w. of Libertytown (Wo), *A. V. Smith & R. R. Tatnall*, 4019, 9 Sept. 1938, and later collections (T, P, A, G); Purnell Pond, 1 mi. n. e. of Snow Hill (Wo), (*A. V. Smith*), *R. R. Tatnall*, 4335, 9 Aug. 1939 (T, P, A).

A southern species.

C. glaucescens Ell.

Rare; swamps in the Coastal Plain: open pine swamp near Snow Hill (Wo), *A. V. Smith* in *Rhodora* 41, 111. 1939; ditch along Salisbury-Snow Hill highway, 1 mi. n. of Longridge (Wo), *A. V. Smith & R. R. Tatnall*, 4642, 3 Aug. 1940 (T).

A southern species, here at its northern limit of range.

*Limosae***C. Barrattii** Schw. & Torr. (*C. littoralis* Schw. of Gray's Man., ed. 7.)

Infrequent; swamps and moist open places, Coastal Plain. May, June.

C. limosa L.

A northern species, in sphagnum bogs from Labrador "southward to southern Delaware" (Mackenzie). No specimen seen.

*Atratae***C. Buxbaumii** Wahl.

Rare; in bogs and wet meadows: McCrones Swamp, Farnhurst (NC), *Commons*, 2 June 1868 (A); Pleasant Hill (Ce), *Otis*, 12 June

1912 (A); marsh 2½ mi. n. e. of Conowingo (Ce), *True*, 4 Aug.
1935 (P). Mid-May to mid-June.

*Acutae***C. stricta** Lam. TUSsock SEDGE.

Common throughout, forming tussocks in marshes. Mid-May,
June

Var. *strictior* (Dewey) Carey. (*C. strictior* Dewey.)

Marshy places; not often collected. May, June.

Var. *decora* Bailey. (*C. Haydenii* Dewey.)

Rare; marshes of the Coastal Plain: ¼ mi. n. w. of Pepperbox
(S), *R. R. Tatnall*, 3740a, 19 May 1938 (T). Probably only a
form of *C. stricta*.

C. Emoryi Dewey.

Rare; swampy places: Holly Oak (NC), *Commons*, 6 June
1866 (A).

C. torta Boott.

Frequent; rooting among rocks in running water; Piedmont.
Late April, May.

*Cryptocarpae***C. Mitchelliana** M. A. Curtis.

One collection: swamps, Millsboro (S), *Commons*, 18 June
1875 (A).

C. gynandra Schw. (*C. crinita* var. *gynandra* Schw. & Torr.)

One collection: margin of Tubmill Pond, 2 mi. n. of Milford
(K), *True*, 18 June 1926 (P).

C. crinita Lam.

Common; swamps, ponds, stream banks and tidal flats, Pied-
mont and Coastal Plain, southward to the Virginia line. Mid-
May to July.

*Collinsiae***C. Collinsii** Nutt. (*C. subulata* Mx. of Gray's Man., ed. 7.)

Local; pond margins and "cedar" swamps in Sussex and Wico-
mico Counties; also Polkville (NC), *E. Tatnall*, 16 June 1893 (D).
Mid-June, July.

*Folliculatae***C. folliculata** L.

Common; swamps and wet woods of the Coastal Plain, at least as far south as the Virginia line. Mid-May, June.

*Pseudo-Cypereae***C. comosa** Boott.

Common throughout, in swamps and on pond margins. June, July.

*Paludosae***C. riparia** W. Curtis var. *lacustris* (Willd.) Kükenth. (*C. lacustris* Willd.)

Infrequent; in swamps along the Delaware River, above Wilmington. Last collected by *Canby* and by *Commons* in 1875. June.

C. trichocarpa Muhl.

"Swamp above Rockland (NC), rare": *Commons*, 29 June 1893 (A).

*Squarrosae***C. Frankii** Kunth.

Apparently collected but once in our area: road between Stockton and Girdletree (Wo), *True*, 166, 30 June 1928 (P).

C. squarrosa L.

Common; swamps, meadows and ditches, Piedmont and Coastal Plain. No known collection from south of Sussex and Talbot Counties. Mid-June to Aug.

C. typhina Mx. (*C. typhinoides* Schw. of Gray's Man., ed. 7.)

Frequent; swamps and low woods, Piedmont and Coastal Plain, southward to Worcester County. June, July.

*Vesicariae***C. vesicaria** L.

Infrequent; swamps on the Coastal Plain of New Castle County. Mid-May, June.

A northern species, here at about its southern limit.

C. inflata Huds. var. *utriculata* (Boott) Druce. (*C. rostrata* Stokes. See *Rhodora* 44, 324-325. 1942.)

Rare; in swamps and meadows: near Harmony Mills (NC), *E.*

Tatnall, without date (D); Fiddler's Bridge, 1 mile s. of St. Georges (NC), *Commons* in 1877 and 1884 (A).

A northern species, local in our area.

C. bullata Schk.

Frequent; swamps on the Coastal Plain. June to Aug.

+ **C. lurida** Wahl.

Common throughout, in swamps and ditches. Late May to July.

Lupulinae

C. intumescens Rudge.

Frequent; swamps, ditches and wet woods of the Coastal Plain, at least as far south as Worcester County. Mid-May to July.

C. lupulina Muhl.

Common throughout, in swamps and ditches. June to Aug.

C. lupuliformis Sartwell.

Rare; swamps and ditches of New Castle County. Seems not to have been collected since 1897 (*Canby* (D)). Mid-June to Aug.

C. gigantea Rudge. (*C. grandis* Bailey.)

Infrequent; swamps. Our specimens are all from the Piedmont and Coastal Plain areas of New Castle County. June to Oct.

A southern species, here at the northern limit of its range.

ARACEAE (ARUM FAMILY)

Arisaema Mart. INDIAN TURNIP.

A. triphyllum (L.) Schott. (Including *A. pusillum* Nash and *A. atrorubens* (Ait.) Blume.) JACK-IN-THE-PULPIT.

Common in rich woods of the northern half of the Peninsula. Late April to mid-May.

The treatment in Gray's Manual, 7th edition, is here followed, as a tentative and unsatisfactory approach to the confused taxonomy of this group. See Fernald: *Rhodora* 42, 247-254. 1940.

A. Dracontium (L.) Schott. GREEN DRAGON.

Infrequent in low ground, Piedmont and Coastal Plain of New Castle and Cecil Counties. Late May to mid-July.

Peltandra Raf. ARROW ARUM.

P. virginica (L.) Kunth. See Fernald: *Rhodora* 42, 430-432. 1940.

Frequent on the Coastal Plain, in marshes, shallow water and tidal mud. No specimens seen from south of the Virginia line. June, mid-July.

Symplocarpus Salisb.

S. foetidus (L.) Nutt. SKUNK CABBAGE.

Common in wet places, at least north of the Virginia line. March, April.

Orontium L.

O. aquaticum L. GOLDEN CLUB.

Frequent; swamps and margins of streams on the Coastal Plain. April, May.

Acorus L.

A. Calamus L. SWEET FLAG.

Common in low ground, especially on the Coastal Plain north of the Virginia line. May, June.

LEMNACEAE (DUCKWEED FAMILY)

Spirodela Schleiden. DUCKWEED.

S. polyrhiza (L.) Schleid.

Common, floating on fresh-water ponds and slow streams, often densely covering the surface.

Lemna L. DUCKMEAT.

L. minor L.

In the same habitats as *Spirodela*, and often accompanying it. Both are very common in our area, in both Piedmont and Coastal Plain provinces.

L. perpusilla Torr.

Rare, in ditches about Wilmington: *Canby* in 1872, 1893 and 1899 (D).

Wolffia Horkel.

W. columbiana Karst.

Found floating in great abundance in a few ponds and canal coves in New Castle County: Chesapeake & Delaware Canal, near Delaware City, *Commons & Tatnall*, Sept. 1896 (A, D); pool along

Pennsylvania Railroad just north of bridge over Shellpot Creek, n. e. of Wilmington, *R. R. Tatnall*, 2993, 30 June 1936 (T, P, A, G); Dragon Marsh, $\frac{3}{4}$ mi. s. w. of Delaware City, *R. R. Tatnall*, 3228, 14 Nov. 1936 (T, A); pond in railroad yards at Landlith, Wilmington, *R. R. Tatnall*, 3428, 29 June 1937 (T).

W. punctata Griseb.

One station: floating on small ponds back of the dunes, on property of Rufus P. Custis, Savage Neck, 4 mi. w. s. w. of Eastville (No), *Fernald, Long & Fogg*, 5251; *R. R. Tatnall*, 3209, 18 Oct. 1936 (T, P, G).

This and the preceding species, floating globules about 1 mm. in diameter, are the smallest known flowering plants; not blooming, however, in our area, as far as is known.

Wolffiella Hegelmeier.

W. floridana (J. D. Smith) Thompson.

There are two known stations on this Peninsula: smallest of the Custis Ponds, 4 miles w. s. w. of Eastville (No), where it forms floating mats two inches or more thick; *Fernald, Long & Fogg*, 5252, in 1935 (G, P), *R. R. Tatnall*, 3387, 1 June 1937 and 3763, in 1938 (T, A); edge of Dragon Marsh, $\frac{3}{4}$ mile s. w. of Delaware City (NC), where it is associated with *Wolffia columbiana*, *R. R. Tatnall*, 3229, 14 Nov. 1936, and several later numbers (T, G, A, P).

ERIOCAULACEAE (PIPEWORT FAMILY)

Eriocaulon L. PIPEWORT.

E. decangulare L.

Frequent; pine-barren swamps, river margins and seashore sands. Our specimens are chiefly from Sussex County, including one by *Nuttall* in 1809. Mid-July to Sept.

E. compressum Lam.

Rather frequent; pine-barren swamps, Sussex and Wicomico Counties. Late May to Aug.

E. septangulare With. (*E. articulatum*, in part, of Gray's Man., ed. 7.)

Borders of fresh-water ponds; frequent in the central part of the Peninsula; one collection from New Castle County: shore of the Delaware River, *Canby*, Aug. 1877 (D). Mid-July to early Sept.

E. Parkeri Robinson.

Frequent in tidal mud of the Coastal Plain. Early Aug. to mid-Oct.

XYRIDACEAE (YELLOW-EYED GRASS FAMILY)

Xyris L. YELLOW-EYED GRASS.

X. caroliniana Walt. (Including forma *flaccida* Fernald. Rhodora 42, 433. 1940.)

Common on sandy margins of ponds, from lower Kent (Del.) and Talbot Counties, southward. July to Sept.

X. difformis Chapman. (Often confused with *X. communis* Kunth.)

Frequent in sandy ditches and on swamp margins, Sussex County and southward. June to Sept.

X. Congdoni Small. (*X. Smalliana* Nash.)

Rare; boggy shores, semi-aquatic: along the railroad, south of Ellendale (S), *Long*, 22 July 1908 (A); Ocean City (Wo), *J. J. Carter*, 12 Aug. 1909 (A); in water of Waples Pond, 3 mi. n. of Milton (S), *R. R. Tatnall*, 928, 4 July 1930 (T).

X. torta J. E. Smith. (*X. flexuosa* of authors, not Muhl.)

Frequent; bogs, meadows and swampy pine woods, Piedmont and Coastal Plain. July, Aug.

COMMELINACEAE (SPIDERWORT FAMILY)

Tradescantia L. SPIDERWORT.

T. virginiana L.

Frequent in the valleys of Brandywine and Red Clay Creeks (NC); rare along the Susquehanna River: Bald Friar (Ce), *Long & St. John*, 18 April 1913 (A), *Fogg*, 14 May 1927 (P). Mid-May to mid-June.

Commelina L. DAY-FLOWER.

C. communis L. See Pennell: *Bartonia* 19, 19-22. 1938. PALE-FLOWERED DAY-FLOWER.

Common weed in gardens and waste places. Early June to Sept. Introd. from China.

C. debilis Ledeb. (*C. communis ludens* (Miquel) Clarke. See Pennell, l. c., also *Proc. Acad. Nat. Sci. Phila.* 90, 31-38. 1938.) DARK-FLOWERED DAY-FLOWER.

Commelina BROMELIAC.—PONTEDERiac. *Heteranthera*

Locally frequent from Sussex and Caroline Counties, southward; occasional in New Castle County. Early June to late Oct. Introd. from China.

C. erecta L.

Rare in open sandy soil and pine woods of the Coastal Plain: Salisbury (Wi), *Commons*, 27 July 1865 (A), and *J. J. Carter*, 14 July 1904 (A); Millsboro (S), *Commons*, 15 Aug. 1877 (A); Laurel (S), *Commons*, 21 Sept. 1880 (G).

Var. *angustifolia* (Mx.) Fernald. *Rhodora* 42, 435-441. 1940.

Rare: dry sand 1 mi. e. of Laurel (S), *Commons*, 19 Aug. 1880, (A, G, U); sandy pine woods near Cape Henlopen (S), *Commons*, 27 Aug. 1895 (A, G, U).

C. virginica L. (*C. hirtella* Vahl.)

Infrequent, in wet woods and on banks of streams and ponds, Piedmont and Coastal Plain. July to Sept.

BROMELIACEAE (PINEAPPLE FAMILY)

Tillandsia L.

T. usneoides L. LONG MOSS. SPANISH MOSS.

Occurs sparingly on holly and pine trees, in mixed woods, about $\frac{3}{4}$ mi. s. w. of Eastville (No): *Fernald & Long*, 5256, in 1935, (U, T), *R. R. Tatnall*, 3025, in 1936, and 3378, in 1937 (T, A).

Apparently this plant does not bloom at this locality, far north of its anticipated occurrence.

PONTEDERiaceae (PICKEREL-WEED FAMILY)

Pontederia L.

P. cordata L. PICKEREL-WEED.

Common, in shallow water, and on muddy shores of ponds and streams. June to mid-Sept. *Lowell*

Heteranthera R. & P.

H. reniformis R. & P. MUD PLANTAIN.

Infrequent; muddy pools and borders of streams, Piedmont and Coastal Plain, southward to Talbot County: Potts Mill Creek, $\frac{3}{4}$ mi. s. of Longwoods (Ta), *Earle*, 3465, 30 Aug. 1941 (P). July to Sept.

H. dubia (Jacq.) MacM. WATER STAR-GRASS.

Infrequent, rooting on bottoms of streams in the Piedmont area.
Aug., early Sept.

JUNCACEAE (RUSH FAMILY)

Juncus L. RUSH

H **J. bufonius** L. TOAD RUSH.

Frequent throughout our area, in open, usually moist, clay or sandy soil. May to July. *Common*

✓H **J. Gerardi** Loisel. BLACK GRASS.

Common in salt marshes of the Coastal Plain. June, July.

An important constituent of "marsh hay." *Summ. C.*

J. tenuis Willd. See Fernald: Rhodora 47, 117 sqq. 1945.

Common in fields and open woods, throughout, preferring foot-paths and cart tracks; also on coastal sand dunes. Mid-May to July.

J. platyphyllus (Wiegand) Fernald. (*J. tenuis* var. *platyphyllus* (Wiegand) Cory.)

Infrequent; tidal marshes, meadows and thickets of the Coastal Plain. Mid-June, July.

J. secundus Beauv.

Infrequent, on serpentine soil; occasional in thickets and open sandy places of the Coastal Plain. June, July.

H **J. dichotomus** Ell.

Common throughout the Coastal Plain, in sandy woods and on dunes along the seashore. June, July. *Common*

J. coriaceus Mack. (*J. setaceus* of Gray's Man., ed. 7.)

Infrequent; salt marshes, borders of fresh-water ponds, and low pine woods, Sussex County and southward. June to Oct.

✓H **J. effusus** L. var. *solutus* Fernald & Wiegand.

Common in swamps and meadows, Piedmont, and Coastal Plain southward at least to Worcester County. June, July.

Var. *costulatus* Fernald. *Rare*

Rare, in ditches and pond borders of the Coastal Plain: Rehoboth (S), True, 19 July 1926 (P); near Georgetown (S),

Fogg, 19 July 1932 (P); near Easton (Ta), *Earle*, 3397, 5 July 1941 (P).

J. Roemerianus Scheele.

Infrequent, in salt marshes, Talbot County and southward. Late May to Sept.

J. canadensis J. Gay.

Common, in swamps, salt marshes, pond borders and pine woods, Piedmont and Coastal Plain. June to Sept.

J. subcaudatus (Engelm.) Coville & Blake. (*J. canadensis* var. *subcaudatus* of Gray's Man., ed. 7.)

Rare, in swamps and margins of ponds, New Castle County: near Centreville, *Commons*, 27 July 1866 (A, U); swamp, Greenbank, *Commons*, 14 Sept. 1884 (A); pond, Christiana, *R. R. Dreisbach*, 29 Aug. 1925 (A). *Dune bog. Sussex Co.*

J. pelocarpus E. Meyer.

Infrequent, in wet, open, sandy places, Kent (Del.) and Sussex Counties. Mid-Aug. to mid-Oct.

J. militaris Bigel.

Rare, in shallow water: Millsboro (S), *Commons*, 8 July 1884 (A); Laurel (S), *E. Tatnall*, June 1893 (D); cypress swamp 1½ mi. s. e. of Laurel, *Fogg*, 1684, 15 June 1926 (P); Waples Pond, Primehook Creek (S), *R. R. Tatnall*, 3412, 15 June 1937 (T); Salisbury (Wi), abundant in stream, *A. V. Smith* in *Rhodora* 41, 111, 1939. *Sussex*

J. nodosus L.

One known collection: swamp, Ellendale (S), *Canby*, 24 July 1893 (D).

J. Torreyi Coville.

Rare: low ground n. w. of Sharptown (Wi), *Otis*, 18 March 1916 (D).

J. scirpoides Lam.

Common in wet sandy soil throughout the Coastal Plain. Late June to Sept. *Dune bog. Sussex Co.*

J. acuminatus Mx.

Common in swamps, ditches and salt marshes, throughout. June, July.

J. Elliottii Chapm.

But one known collection: Ellendale (S), *Long*, 22 July 1908 (A).
Range extension from North Carolina or Virginia.

J. debilis Gray.

Frequent in wet sandy soil, marshes and low woods of the Coastal Plain. June, July.

J. repens Mx.

Frequent; wet meadows, dune hollows and running water, Coastal Plain. Mid-July, Aug.

J. marginatus Rostk.

Infrequent; in damp soil, Piedmont and Coastal Plain. June, July.

J. biflorus Ell. (*J. aristulatus* Mx.)

Frequent; meadows, bogs, salt marshes and dune hollows, Coastal Plain. July, Aug.

Luzula DC. WOOD RUSH.

(For key, see Hermann, *Rhodora* 40, 83-85. 1938).

L. acuminata Raf. (*L. saltuensis* Fernald. See *Rhodora* 46, 4 1944.)

Our only record is based on a specimen collected on the south bank of Noxontown Pond, near Middletown (NC), by *Canby* in June 1862 (A).

L. multiflora (Ehrh.) Lejeune. (*L. campestris* (L.) DC var. *multiflora* of manuals.)

Wooded slopes, apparently rare: woods, Greenbank (NC), *Commons*, 29 May 1883 (A); Rowlandsville (Ce), woods along Octoraro Creek, *Long & Bartram*, 1223, 31 May 1913 (A); wooded slope along Duffy Creek, 2 mi. s. e. of Cecilton (Ce), *Long*, 48412, 16 May 1936 (A).

L. bulbosa (Wood) Rydb. (*L. campestris* var. *bulbosa* Wood.)

Frequent; dry woods, meadows and saline shores. Mid-April, mid-May.

L. echinata (Small) F. J. Hermann. (*L. campestris* var. *echinata* of manuals.)

Common in woods and meadows, Piedmont and Coastal Plain. April, May.



SWAMP PINK, (*Helonias bullata*)

Though in its distribution not confined to our area, this showy bloom is rarely seen elsewhere in the abundance it exhibits in a sphagnous woodland near Milton, Sussex County, Delaware, where, on April 17th, 1946, sixty foot-high flower-heads were counted from a single viewpoint.

LILIACEAE (LILY FAMILY)

Narthecium (Moering) Juss.

N. americanum Ker. BOG ASPHODEL.

Rare: swamp near Lewes (S), *Commons*, in fruit, 1 Aug. 1895 (A); also reported by E. Tatnall (MS Catalog) as having been found by *Commons & Tatnall* on damp railroad bank at Vandyke (NC), 26 Sept. 1894, no specimen seen.

Xerophyllum Mx.**X. asphodeloides** (L.) Nutt. TURKEY BEARD.

One collection: dry pine woods near Laurel (S), *Commons*, 5 Aug. 1874 (A).

Helonias L.**H. bullata** L. SWAMP PINK.

In swamps of the Coastal Plain; frequent in Sussex County; infrequent in New Castle and Kent Counties, Del.; rare in Cecil County: low woods 2½ mi. s. e. of Elkton, *R. R. Tatnall*, 4479, 8 May 1940 (T). Early April to early May.

Chamaelirium Willd.**C. luteum** (L.) Gray. BLAZING STAR.

Infrequent, in rich woods and thickets of the Piedmont area. June.

Tofieldia Huds.**T. racemosa** (Walt.) BSP. FALSE ASPHODEL.

Rare, in wet ground or shallow water: "Glades south of Lewes-ton" (S), *Canby*, 13 July 1878 (A); near Lewes, *Commons*, 15 Aug. 1895 (A); wet ground on east side of railroad, ¾ mi. n. w. of Howlands Glade bridge (S), and 3 mi. n. w. of Rehoboth, *Otis*, 14 Aug. 1923; same locality, *R. R. Tatnall*, 3173, 5 Sept. 1936 (T, P, G), and 3461, 5 Aug. 1937 (T, P, G).

The above-mentioned localities probably all refer to the same or closely adjacent points, and the plant is not known to have been found elsewhere in our area. A southern species, here near its northern limit.

Amianthium Gray.**A. muscaetoxicum** (Walt.) Gray. FLY POISON.

Infrequent, dry hillsides or low woods, New Castle County; one

collection in Kent County, Del.: along Penrose Branch, 5½ mi. w. of Dover, *H. H. Hanson*, 24 June 1930 (UD).

Zygadenus Mx.

Z. leimanthoides Gray.

Infrequent; swamps and ditches of the northern Coastal Plain area of New Castle County. Late June to mid-July.

Melanthium L.

M. virginicum L. BUNCH FLOWER.

Infrequent in swamps and meadows, chiefly of the Coastal Plain; rare southward: ditch 2 mi. w. of Powellville (Wi), (*A. V. Smith*), *R. R. Tatnall*, 4650, 4 Aug. 1940 (T). July.

M. latifolium Desr.

Infrequent, in rocky woods of northern New Castle County. Seldom blooming. Mid-May to early June.

Veratrum L.

V. viride Ait. FALSE HELLEBORE.

Swampy woods and thickets; frequent in northern Cecil and New Castle Counties; rare southward on the Coastal Plain: Talbot County, *Earle*, 2453, 11 May 1940 (P), and 3195, 17 May 1941 (P); swamp 5 mi. s. of Berlin (Wo), *A. V. Smith* in *Rhodora* 38, 278. 1940. May, June.

Uvularia L. BELLWORT.

U. perfoliata L.

Rich woods; frequent in the Piedmont area, becoming rare southward: Talbot County, *Earle*, 2464, 1 June 1940 (P), and 2793, 5 July 1940 (P). May.

U. sessilifolia L. (*Oakesia sessilifolia* of Gray's Man., ed. 7.)

Woods, thickets and ditches; common in the Piedmont; rare on the Coastal Plain: railroad ditch 2 mi. s. e. of Georgetown (S), *R. R. Tatnall*, 1722, 7 May 1933 (T, P); near Trappe (Ta), *Earle*, 2384, 11 May 1940 (P). Mid-April, May.

Allium L. GARLIC. ONION.

A. tricoccum Ait. BROAD-LEAVED GARLIC.

Infrequent; rocky woods, New Castle County. Leaves appear in April, flowers in July.

A. cernuum Roth.

Rare: rocky island in the Susquehanna River near Conowingo (Ce), *J. Crawford*, 29 June 1924 (A), locality destroyed.

✓† **A. canadense** L. WILD GARLIC.

Frequent; meadows and beaches, Piedmont and Coastal Plain. May, June. *Sussex Co.*

A. vineale L. FIELD GARLIC.

Common; fields, meadows and brackish shores, Piedmont and Coastal Plain. June, July. Nat. from Europe.

Nothoscordum Kunth.**N. bivalve** (L.) Britton.

Rare: salt marsh near Kiptopeke (No), *Fernald, Long & Fogg*, 5268, 14 Oct. 1939 (G, T).

Hemerocallis L.**H. fulva** L. DAY LILY.

Escaped from cultivation, and well established on roadsides. June. Introd. from Europe.

Lilium L. LILY.**L. philadelphicum** L. WOOD LILY.

Rare; dry ground in New Castle County: "New Castle County," *Commons*, July 1865 (A); Centreville, *Commons*, 17 June 1870 (A); near brickyard on Elliott Ave., Wilmington, *E. Tatnall*, June 1896 (D).

L. superbum L. TURK'S-CAP LILY.

Common in meadows and swampy woodlands, Piedmont and Coastal Plain. July, Aug.

L. canadense L. WILD YELLOW LILY.

Meadows and low woods; infrequent in the Piedmont; rare on the Coastal Plain: woods, Woodland Beach (K), *Commons*, 30 June 1898 (A); same, *R. R. Tatnall*, 1461, 4 July 1932 (T); woods 3 mi. n. e. of Trappe (Ta), *Earle*, 2765, 5 July 1940 (P).

Erythronium L.**E. americanum** Ker. "DOG'S-TOOTH VIOLET." TROUT LILY.

Rich or sandy woods; common in the Piedmont area, infrequent on the Coastal Plain southward to Talbot County (*Earle*). April.

Ornithogalum L.

H **O. umbellatum** L. STAR OF BETHLEHEM.

A garden escape, well established on roadsides in the northern half of our territory. May. Introd. from Europe. *P. L. (1911), 201*

O. nutans L.

A rare escape: site of old house, Bald Friar (Ce), Long & St. John, 13 April 1918 (A). Introd. from Europe.

Muscari Mill. GRAPE HYACINTH.

M. botryoides (L.) Mill. BLUE BOTTLE.

An infrequent escape to roadsides. Mid-April, May. Introd. from Europe.

M. racemosum (L.) Mill. BLUE BOTTLE.

Escaped from gardens to fields and roadsides; becoming common. Mid-April to mid-May. Introd. from Europe.

Yucca L.

Y. filamentosa L. (*Y. concava* Haw. See Rhodora 46, 5-9. 1944.)
SPOON-LEAVED YUCCA.

Frequent in sandy pine woods and on dry sand back of beaches, Sussex County and southward.

Asparagus L.

✓ H **A. officinalis** L. ASPARAGUS.

Frequently escaping and persisting. June, July. *Revered Bell*

Smilacina Desf.

H **S. racemosa** Desf. var. *cyindrata* Fern. See Rhodora 40, 406. 1938.
FALSE SOLOMON'S SEAL.

Common on wooded slopes, Piedmont and Coastal Plain. Mid-May, early June. Apparently we do not have the northern, typical form of the species. *P. L. (1911), 201*

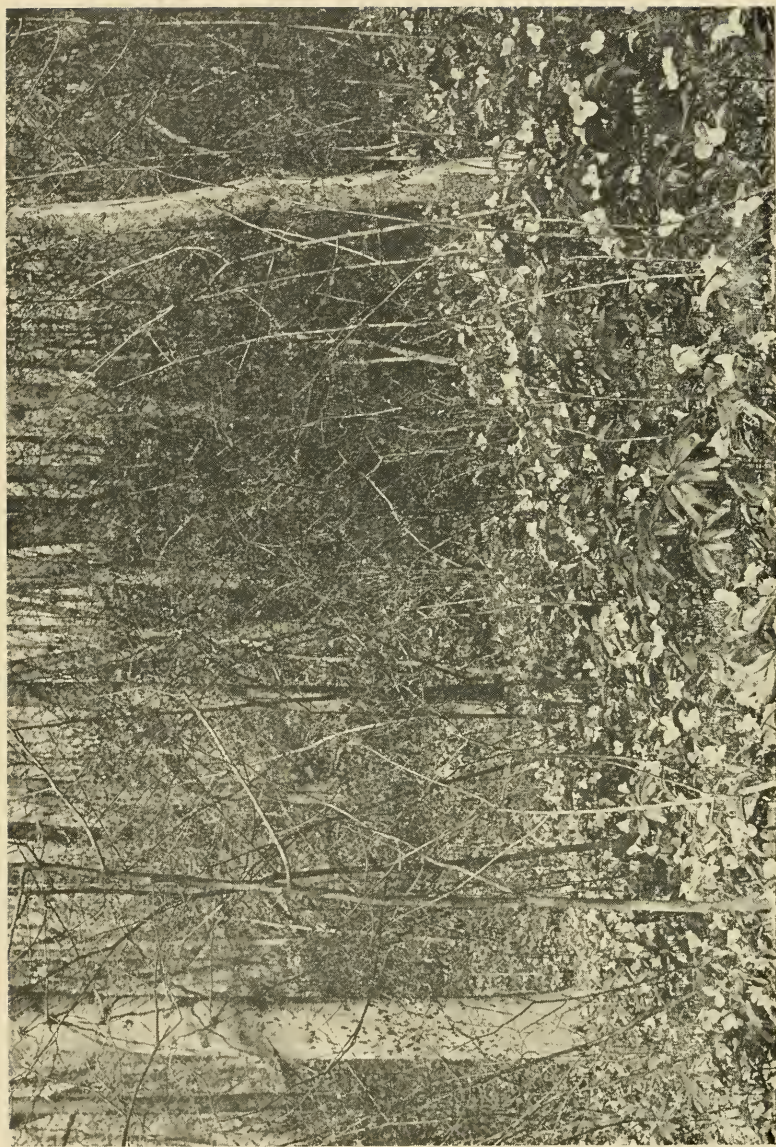
Maianthemum Wiggers.

M. canadense Desf. TWO-LEAVED SOLOMON'S SEAL.

Common in rich woodlands, and occasional in swamps. Late April to early June.

Polygonatum Hill.

P. pubescens (Willd.) Pursh. (*P. biflorum* of Gray's Man., ed. 7.)
SMALL SOLOMON'S SEAL.



GREAT WHITE TRILLIUM, (*Trillium grandiflorum*)

Although this plant is a characteristic inhabitant of higher altitudes, on our Peninsula it invades the Coastal Plain, carpeting the forest floor with gorgeous bloom, which in our area is usually a lovely and delicate pink, rather than white.

Frequent in woodlands of the Piedmont; infrequent southward to Talbot County (*Earle*). May, June.

P. biflorum (Walt.) Ell. (*P. commutatum* of Gray's Man., ed. 7.)

Common in woodlands, Piedmont, and Coastal Plain southward to Worcester County. May, early June.

P. canaliculatum (Muhl.) Pursh. See Fernald: *Rhodora* 46, 9-12. 1944.

Rare, in the Piedmont: "Newark & Pomeroy Railroad," *E. Tatnall*, 2 June 1896 (D); woods below Rowlandsville (Ce), *Long & Bartram*, 1208, 31 May 1913 (A); Conowingo (Ce), $\frac{1}{2}$ mi. s. e. of the village, *Fogg*, 15 May 1927 (P).

Medeola L.

M. virginiana L. INDIAN CUCUMBER ROOT.

Rich woods; common in the northern portion; infrequent southward. Mid-May to mid-June.

Trillium L. WAKE ROBIN.

T. erectum L. ILL-SCENTED WAKE ROBIN.

Woods, New Castle County; rare, and not recently reported: "T. Armstrong's," *Commons*, May 1863 (A).

T. Gleasoni Fern.

Very rare: Mt. Cuba (NC), *C. S. Williamson*, without date (A).

T. grandiflorum (Mx.) Salisb. LARGE-FLOWERED WHITE TRILLIUM.

There are two colonies in Cecil County, in each of which this plant is very abundant: woods on Middle Neck, bordering Great Bohemia Creek; woods n. e. of Cecilton. Late April to mid-May.

T. cernuum L. NODDING WAKE ROBIN.

Moist woods of New Castle County, especially at Mt. Cuba, where found by many collectors since 1891. May.

Aletris L.

A. farinosa L. COLIC ROOT.

Frequent in dry, sandy fields, meadows and open woods, Piedmont, and southward on the Coastal Plain to Worcester County; sometimes occurring in salt meadows. Mid-June to mid-July.

Smilax L.

S. herbacea L. CARRION FLOWER.

Frequent in meadows and woods of both provinces. Late May to early June.

S. pulverulenta Mx.

Frequent in dry woods, chiefly of the Piedmont. Mid-May to late May.

S. Pseudo-China L. (*S. tamnifolia* Mx. See *Rhodora* 46, 32-35. 1944).

Infrequent; moist sandy soil throughout the Coastal Plain. Mid-June to early July.

S. Walteri Pursh.

Infrequent in swampy woods and on pond margins, Sussex County and southward. May, early June.

✓ **S. rotundifolia** L. GREEN BRIAR.

Common in thickets and borders of woods, throughout. May, early June.

✓ **S. glauca** Walt.

Frequent throughout, in dry thickets and on serpentine soil. Mid-May to mid-June.

S. Bona-nox L.

Infrequent; dry pine woods and clearings, Wicomico County to Cape Charles. June.

Var. *hederaefolia* (Beyrich) Fernald. (See *Rhodora* 46, 36. 1944.)

Rare: Millsboro (S), *Commons*, 23 May 1876 (A).

S. hispida Muhl.

Rare: Mt. Cuba (NC), *Commons*, in 1866 and 1896 (A); same, *E. Tatnall*, 21 May 1896 (D); edge of swamp along Nanticoke River near Sharptown (Wi), *Otis*, 13 March 1916 (A).

S. laurifolia L.

Frequent in swampy woods, Sussex County and southward; one collection in Cedar Swamp near Deakyneville (NC), *Commons*, 23 Oct. 1863 (A, D). Aug.

Fruit maturing the second season.

Lachnanthes HAEMODORAC.—AMARYLLIDAC. *Leucojum*

HAEMODORACEAE (BLOODWORT FAMILY)

***Lachnanthes* Ell.**

***L. tinctoria* (Walt.) Ell. RED-ROOT.**

Frequent in bogs and sandy swamps, Kent (Del.) and Sussex Counties. July, early August.

***Lophiola* Ker.**

***L. americana* (Pursh) Coville. (*L. aurea* Ker.)**

Very rare: "Pine-barren bogs between Gumboro and Laurel" (S), *Commons*, 5 Aug. 1874 (A). The only known collection.

A southern species, here near the northern limit of its range.

DIOSCOREACEAE (YAM FAMILY)

***Dioscorea* L. YAM.**

***D. villosa* L. WILD YAM.**

Frequent in thickets; Piedmont, and Coastal Plain southward at least to Talbot County. June.

Not to be confused with the Sweet Potato, a variety of which is sometimes called "yam."

[*D. quaternata* (Walt.) Gmel. var. *glauc*a (Muhl.) Fern. (*D. glauca* Muhl. See *Rhodora*: 39, 399. 1937.)

This species is to be expected in our area, but appears not to have been collected here.]

AMARYLLIDACEAE (AMARYLLIS FAMILY)

***Hypoxis* L.**

***H. hirsuta* (L.) Coville. (*H. erecta* L.) STAR GRASS.**

Common throughout, in open woods and on dry roadsides. Mid-May to mid-July.

***Leucojum* L.**

***L. aestivum* L. SNOWFLAKE.**

An escape from cultivation; established along St. Jones Creek, in Dover (K), (*H. H. Hanson*, *H. R. Baker*, *J. M. Fogg, Jr.*); also along Christiana Creek, at Christiana (NC), (*R. Earle Dickey*). Early spring. Introd. from Europe.

IRIDACEAE (IRIS FAMILY)

Iris L.

I. versicolor L. LARGER BLUE FLAG.

Common in meadows and seashore sands. Mid-May, early June.

I. prismatica Pursh. SLENDER BLUE FLAG.

Infrequent in low ground of the Coastal Plain, New Castle, Cecil and Sussex Counties. Late May, June.

I. Pseudacorus L. YELLOW IRIS.

An infrequent escape in meadows. Late May, June. Introd. from Europe.

Belamcanda Adans.**B. chinensis** (L.) DC. BLACKBERRY LILY.

Escaped to roadsides, New Castle and Cecil Counties. July. Nat. from Asia.

Sisyrinchium L. BLUE-EYED GRASS.**S. mucronatum** Mx. (Including *S. intermedium* Bickn.)

Frequent; fields, meadows and rocky woods, sometimes on serpentine soil; Piedmont, and the northern part of our Coastal Plain area. Late May, June.

S. graminoides Bickn. (*S. gramineum* of Gray's Man., ed. 7.)

Common throughout; meadows, damp woods and open roadsides. Late May, June.

S. atlanticum Bickn.

Frequent; moist fields and ditch banks of the Coastal Plain. Mid-May, June.

ORCHIDACEAE (ORCHIS FAMILY)

Cypripedium L. MOCCASIN FLOWER.

C. Calceolus L. var. *pubescens* (Willd.) Correll. (*C. parviflorum* Salisb. var. *pubescens* (Willd.) Knight. See Correll: Bot. Mus. Leaflet of Harvard University 7: 1-18, 1938.)
LARGE YELLOW LADIES' SLIPPER.

Rare; in rich woodlands: Mt. Cuba (NC), *Canby*, 4 July 1893 (D), and later collections by others; Stone Run (Ce), *J. J. Carter*

in 1907 and 1910 (A); 2½ mi. n. e. of Cecilton (Ce), *F. M. Jones & R. R. Tatnall*, 3286, 13 May 1937 (T, D); 5½ mi. w. of Easton (Ta), *Earle*, 1469, 30 May 1937 (P). May.

Formerly rather frequent along the Brandywine and Red Clay Creeks, but not found in New Castle County since 1896.

C. acaule Ait. PINK LADIES' SLIPPER. MOCCASIN FLOWER.

In woods, chiefly on the Coastal Plain; common in the northern half of the Peninsula; less frequent southward to Accomac County. May, early June.

Orchis L.

O. spectabilis L. SHOWY ORCHIS.

Frequent in rich woods of the two northern counties; two recent collections in Talbot County (*Earle*).

Habenaria Willd. REIN ORCHIS.

H. flava (L.) Gray. TUBERCLED ORCHIS.

Rare, in wet places: along Brandywine Creek above Wilmington, *Commons*, 7 July 1868 (A); Granogue (NC), *E. Tatnall*, 21 & 24 June 1894 (A, D); shallow water of millpond, Salisbury (Wi), *J. J. Carter*, 15 July 1904 (A).

H. nivea (Nutt.) Spreng. SNOWY ORCHIS.

Rare, in wet places of the Coastal Plain: upland meadows near Felton (K), *Canby*, Sept. 1867 (A), and Aug. 1869 (D); salt marsh near beach, Rehoboth (S), *J. W. Harshberger*, 1 Aug. 1910 (P).

Here reaching its northern limit.

H. clavellata (Mx.) Spreng. (*H. tridentata* Hook.) SMALL GREEN ORCHIS.

Frequent in swamps and on margins of streams, Piedmont and Coastal Plain. Mid-July, early August.

H. cristata (Mx.) R. Br. CRESTED YELLOW ORCHIS.

Swamps, wet roadsides and low woods of the Coastal Plain; frequent in Sussex County and southward; rare farther north: Dover (K), *George Redles*, 1 Aug. 1869 (A); bog n. e. of Glasgow Station (NC), *R. R. Tatnall*, 969, 3 Aug. 1930 (T). Late July to early Oct.

H. ciliaris (L.) R. Br. YELLOW FRINGED ORCHIS.

Infrequent in swamps and wet meadows, Piedmont and Coastal Plain southward to Worcester County. Late July, Aug.

H. blephariglottis (Willd.) Torr. WHITE FRINGED ORCHIS.

Infrequent; swamps and wet open places; Kent County (Del.), and southward to Worcester County. Mid-July to mid-August.

× **H. Canbyi** Ames. (*H. blephariglottis* × *H. cristata*.)

Rare: Open grassy place along the railroad, at road crossing 3 mi. n. n. w. of Rehoboth (S), where a single specimen was found in company with the two parent species; (*Margaret B. Taylor*), *R. R. Tatnall*, 3448, 23 July 1937 (T). This station is the same as, or close to, *Canby's* locality of 1878; see Gray's Manual, ed. 7.

H. lacera (Mx.) R. Br. GREEN FRINGED ORCHIS.

Frequent in open swamps and low woods, Piedmont, and Coastal Plain southward to Sussex County. Mid-June, July.

H. psycodes (L.) Sw. SMALLER PURPLE FRINGED ORCHIS.

Rare, in wet meadows and low woods of the Piedmont: "Brandywine" (NC), *E. Tatnall*, 23 July 1858 (D); Centreville (NC), *Commons*, 9 Aug. 1864 (A); Folly Woods, 1 mi. n. e. of Newport (NC), *Commons*, 6 June 1895 (A); Conowingo (Ce), *J. Crawford*, 4 July 1924 (A). June, July.

H. fimbriata (Ait.) R. Br. LARGE PURPLE FRINGED ORCHIS.

Very rare: one collection, "Latimer's woods," s. w. of Wilmington, *E. Tatnall*, without date, but probably about 1844 (T).

H. peramoena Gray. FRINGELESS PURPLE ORCHIS.

Rare and local: "Moist meadows above Rockland (NC) along Brandywine Creek, rare, only known locality," *Commons*, 8 Aug. 1864 (A); Granogue (NC), *Canby*, according to *E. Tatnall* (MS Catalog); meadow along White Clay Creek, about 1 mi. n. of Newark (NC), *George R. Proctor*, 1113, 4 Aug. 1944 (Herb. Proctor); rather abundant at this station; same locality, *R. R. Tatnall*, 5222, 28 July 1945 (T, A).

Pogonia Juss.**P. ophioglossoides** (L.) Ker.

Infrequent, in bogs, ditches and pond margins, Piedmont and Coastal Plain provinces. June, early July.

Triphora Nutt.

T. trianthophora (Sw.) Rydb. (*Pogonia pendula* Lindl. *P. trianthophora* (Sw.) BSP.)



FIGURE 30. *HABENARIA* OR
DELAVARE DELAWARE, MARYLAND AND VIRGINIA
 R. R. TATNALL, JR. 1910. 1911. 1912.

Habenaria Canbyi ad.
 (Corolla imbricate)

Rehoboth, 3 mi NW, along railroad
 at road crossing, 1 mi E of
 Howland Glade. Among *H. cristata*
 and *H. blephariglottis*.

CANBY'S ORCHIS, (*Habenaria Canbyi*)

This natural hybrid between *Habenaria cristata* and *H. blephariglottis*, first detected by William M. Canby in 1878, and named for him, was collected in the same locality nearly sixty years later by R. R. Tatnall, and his mounted specimen is the basis of this illustration. About one-half natural size.

Rare and local: meadows and low woods of the Piedmont: near Rowlandsville (Ce), *J. J. Carter* in 1866, 1867 (A); rich woods, Hockessin (NC), *J. Hoopes*, according to *E. Tatnall* (MS Catalog).

Cleisthes Richard

C. divaricata (L.) Ames. (*Pogonia divaricata* (L.) R. Br.) SMALL WHORLED POGONIA.

Rare, in wet meadows and ditches, Sussex County: near Dagsboro, *Nuttall*, June 1809 (A); meadow e. of Ellendale, *Long*, 22 July 1908 (A); thicket-pasture $\frac{1}{4}$ mi. e. of Ellendale (*A. V. Smith*), *R. R. Tatnall*, 3944, 7 Sept. 1938 (T), and 4257, 12 June 1939 (T); ditch along the railroad, at road crossing, 3 mi. n. w. of Rehoboth, *R. R. Tatnall*, 934, 4 July 1930 (T), and 3171, in fruit, 5 Sept. 1936, this locality now destroyed.

Isotria Raf.

I. verticillata (Willd.) Raf. (*Pogonia verticillata* (Willd.) Nutt.) LARGE WHORLED POGONIA.

Infrequent in dry or moist woods, Piedmont and Coastal Plain of New Castle and Cecil Counties; rare southward: 2 mi. s. e. of Georgetown (S), *R. R. Tatnall*, 1392, 29 May 1932 (T); 5 mi. s. e. of Salisbury (Wi), (*A. V. Smith*), *R. R. Tatnall*, 4621, 3 Aug. 1940 (T). Flowering in early May.

Calopogon R. Br.

C. pulchellus (Sw.) R. Br. GRASS PINK.

Infrequent, in meadows, swamps and salt marches, Piedmont and Coastal Plain southward to Worcester County. June, July.

Arethusa L.

A. bulbosa L. BOG-ROSE ORCHIS.

Rare and local; in bogs and on margins of ponds; Coastal Plain: near Dagsboro (S), *Nuttall*, June 1809 (A); McCrone's Swamp, near Farnhurst (NC), *Canby*, May 1866 (D); same locality, *Commons* in 1866 and 1882 (A); Millsboro (S), *Commons* in 1876 (A); margin of Hudson Pond (S), 5 mi. s. of Milford, *R. R. Tatnall*, 302, 30 May 1929 (T, P), and two previous collections. Mid-May to mid-June.

The Hudson Pond station is perhaps the last stand of *Arethusa* on the Peninsula, and recent draining of the pond may have exterminated it.

Spiranthes Rich. LADIES' TRESSES.**S. Beckii** Lindl. (*S. simplex* Gray.)

Infrequent in dry soil, including serpentine, New Castle, Sussex and Worcester Counties. Mid-July to mid-Sept.

S. gracilis (Bigel.) Beck.

Usually in dry soil, including serpentine; infrequent in the Piedmont area; rare southward: Salisbury (Wi), *Canby*, Aug. 1894 (D); Rehoboth (S), *C. S. Williamson*, 1 Sept. 1908 (A); pine woods near Easton (Ta), *Earle*, 3038, 3 Sept. 1940 (P); bank of pond, Choptank Mills (K), *R. R. Tatnall*, 5223, 19 Aug. 1945 (T). Early July to mid-Sept.

S. vernalis Engelm. & Gray.

Infrequent; dry soil, meadows, and borders of salt marshes of the Coastal Plain, New Castle County, and southward to Sussex and Talbot Counties. July.

S. praecox (Walt.) Watson & Coulter. GIANT LADIES' TRESSES.

Rare, and not recently seen, Piedmont and Coastal Plain: "along upper Mill Creek" (near Hockessin (NC)), *Canby*, 17 July 1897 (D); Millsboro (S), *Commons*, 20 Sept. 1880 (A).

S. lucida (Eaton) Ames. (*S. latifolia* Torr.)

Rare; moist banks and tidal mud, Piedmont and Coastal Plain: shore of Delaware River, Holly Oak (NC), *Commons*, 6 June 1866 (A); moist bank at Pleasant Hill, Mill Creek Hundred (NC), *Commons & Tatnall*, 28 May 1894 (A); Bivalve (Wi), *J. J. Carter*, 12 June 1906 (A); Conowingo (Ce), *C. S. Williamson*, 30 May 1907 (A); tidal mud of beach, Randalia (Ce), *R. R. Tatnall*, 910, 8 June 1930 (T, P). May, June.

S. cernua (L.) Rich. NODDING LADIES' TRESSES.

Common on the Coastal Plain, in wet meadows, roadside ditches, and coastal dune-hollows, at least as far south as Sussex County. Mid-Sept. to mid-Oct.

Goodyera R. Br.**G. pubescens** (Willd.) R. Br. (*Epipactis pubescens* (Willd.) A. A. Eaton). RATTLESNAKE PLANTAIN.

Common in dry, or sometimes low, woods, Piedmont and Coastal Plain. Late July to mid-August.

Corallorhiza (Haller) R. Br

C. maculata Raf. SPOTTED CORAL ROOT.

Rare; in woods: near Centreville (NC), *Commons*, Sept. 1863 (A); Chestertown (Ke), *E. G. Vanatta*, 2 Aug. 1905 (A). Late July into Sept.

C. Wisteriana Conrad. EARLY CORAL ROOT.

Infrequent in woods of the Piedmont and Coastal Plain, in New Castle and Cecil Counties. Late April to mid-May.

C. odontorhiza (Willd.) Nutt. AUTUMN CORAL ROOT.

In woods, often under pines or hemlocks; infrequent throughout. Mid-Aug. to late Sept.

Malaxis Soland.**M. unifolia** Mx. (*Microstylis unifolia* of Gray's Man., ed. 7.)
GREEN ADDER'S MOUTH.

Dry woods, usually under pines; infrequent but widespread in both Piedmont and Coastal Plain provinces. Early June to mid-July.

Liparis Rich.**L. liliifolia** (L.) Rich. TWAYBLADE.

Frequent in rich woods of the Piedmont, and sandy pine woods southward to Wicomico County. Late May, June.

Aplectrum (Nutt.) Torr.**A. hyemale** (Muhl.) Torr. ADAM-AND-EVE. PUTTY ROOT.

Rather frequent in rich woods of the Piedmont of New Castle and Cecil Counties; rare on the Coastal Plain: rich woods 2½ mi. n. e. of Cecilton (Ce), *R. R. Tatnall*, 5242, 19 Oct. 1945 (T). Late May, early June.

Tipularia Nutt.**T. discolor** (Pursh) Nutt. (*T. unifolia* (Muhl.) BSP.) CRANE-
FLY ORCHIS.

Rocky slopes of the Piedmont, and rich or sandy woods of the Coastal Plain; frequent and widely distributed throughout. Flowering from mid-July to mid-August.

SAURURACEAE (LIZARD'S TAIL FAMILY)

Saururus L. LIZARD'S TAIL

S. cernuus L.

Common in ponds and muddy places, Piedmont and Coastal Plain southward to the Virginia line. Mid-June, July.

SALICACEAE (WILLOW FAMILY)

Salix L. WILLOW.

S. nigra Marsh. BLACK WILLOW.

Common throughout; stream banks, meadows and roadsides. March, April.

S. longipes Shuttlew. var. Wardi (Bebb.) Schneider. (*S. Wardi* of Gray's Man., ed. 7.)

One collection: about ponds in woods, Savage Neck, 4 mi. s. w. of Eastville (No), *Fernald, Long & Fogg*, 5285, 15 Oct. 1935 (G, A, T).
A southern species.

S. lucida Muhl. SHINING WILLOW.

Rare; on stream banks and in low ground in the northern part of our area: Delaware Junction (NC), *Commons*, 7 May 1864 (A); Wilmington, Cherry Island Marsh, *Commons*, 23 June 1890 (A); bank of Elk River, 2 mi. s. of Elkton (Ce), *H. E. Stone*, 8 May 1927 (A).

S. fragilis L. CRACK WILLOW.

Planted, and established along streams in the Piedmont area of New Castle County; also near Easton (Ta), *Earle*, 3225, 17 May 1941 (P). Nat. from Europe.

S. alba L. WHITE WILLOW.

Occasionally established. Introd. from Europe.

Var. vitellina (L.) Koch. GOLDEN WILLOW.

Occasionally spreading from plantings. Nat. from Europe.

S. babylonica L. WEEPING WILLOW.

Widely planted, and sometimes spreading. Introd. from Europe.

S. interior Rowlee. (*S. longifolia* Muhl.) SAND BAR WILLOW.

Infrequent, on sandy shores, New Castle and Sussex Counties. Early May, June.

S. cordata Muhl.

Infrequent, on stream banks of the Piedmont. Mid-April, May.

S. discolor Muhl. GLAUCCOUS WILLOW.

Rare, in the Piedmont area: moist hillside near Mt. Cuba (NC), *Commons*, in 1875 (A); Leslie (Ce), *J. B. Brinton*, 10 May 1891 (P). Late Feb., March.

A small tree of moist ground.

S. Caprea L. GOAT WILLOW.

Planted, and occasionally spreading. Introd. from Europe.

S. humilis Marsh. PRAIRIE WILLOW.

Barrens and margins of woods; common in the Piedmont, becoming infrequent southward to Sussex and Talbot Counties. Mid-April to mid-May.

S. tristis Ait.

Infrequent in dry barrens and thickets of the Piedmont; rare southward: near Capeville (No), *Fernald, Long & Fogg*, 5287 (P, T). Early April.

S. sericea Marsh. SILKY WILLOW.

Infrequent, in wet places, chiefly in the Piedmont. Mid-April to mid-May.

A shrub or small tree.

S. Bebbiana Sarg. (*S. rostrata* of Gray's Man., ed. 7.)

Rare: dry roadside $2\frac{1}{2}$ mi. s. of Wye Mills (Ta), *R. R. Tatnall*, 1123, 29 May 1931 (T, P); 2 mi. n. e. of Trappe (Ta), *Earle*, 5245, 4 July 1939 (P).

S. purpurea L. PURPLE WILLOW.

In low ground, New Castle County; cultivated for baskets and for powder manufacture, and escaped. Nat. from Europe.

Populus L. POPLAR. ASPEN.**P. alba** L. WHITE POPLAR.

Planted, and often spontaneous on roadsides and in clearings. Introd. from Europe.

P. tremuloides Mx. AMERICAN ASPEN.

One tree: on race bank at Greenbank (NC). *Commons* in 1864. Late March, April.

P. grandidentata Mx. LARGE-TOOTHED ASPEN.

Frequent in woods, thickets and low ground of the Piedmont, and southward on the Coastal Plain to Sussex and Talbot Counties. Early April.

P. heterophylla L. SWAMP POPLAR.

Frequent in low woods and on margins of ponds on the Coastal Plain, from lower New Castle County southward to the Virginia line. April, May.

P. balsamifera L. BALSAM POPLAR.

Rare; on stream banks in northern New Castle County: Stanton, bank of Red Clay Creek, *Commons* in 1863 (A); along Shellpot Creek, Wilmington, *Commons* in 1879 (A).

P. deltoides Marsh. (*P. monilifera* Ait.) COTTONWOOD.

Rare, on banks of streams: Wilmington, *Commons* in 1896 (A); shore of Delaware River near Holly Oak (NC), *Commons* in 1896 (A); Claiborne (Ta), *Tidestrom*, 5797, 21 May 1912 (U).

MYRICACEAE (BAYBERRY FAMILY)

Myrica L.

M. cerifera L. WAX MYRTLE.

Common in sandy soil, Sussex and Talbot Counties and southward. May.

M. heterophylla Raf. (*M. carolinensis* Mill, in part. See Fernald: *Rhodora* 40, 409-410. 1938.) BAYBERRY.

Sandy thickets, river banks and swamps; rather frequent from the Fall Line southward to Sussex and Talbot Counties, chiefly inland. May.

M. pensylvanica Loisel. (*M. carolinensis* Mill. in part. See Fernald: *Rhodora* 37, 423. 1934.)

Frequent throughout the Coastal Plain, on beaches and dunes, and in fresh and salt marshes. Chiefly maritime, but also occurring inland. May.

M. pusilla Raf.

Rare, in dry thickets: thicket bordering west side of white cedar swamp $\frac{1}{2}$ mi. w. of Concord (S), *R. R. Tatnall*, 3570, 2 Oct. 1937, and 3681, 7 May 1938 (T, P, G).

Comptonia Banks.

- C. peregrina** (L.) Coulter var. **asplenifolia** (L.) Fernald. (*Myrica asplenifolia* of Gray's Man., ed. 7. See *Rhodora* 40, 410-412. 1938.) SWEET FERN.

Infrequent on dry banks of the Piedmont, and on shaded sandy roadsides in Wicomico and Worcester Counties. April.

JUGLANDACEAE (WALNUT FAMILY)

Juglans L. WALNUT.

- J. cinerea** L. WHITE WALNUT. BUTTERNUT.

Frequent in rocky woods of the Piedmont. Fl., May.

- J. nigra** L. BLACK WALNUT.

In fencerows and woods; frequent in the northern portion; less common southward. Fl., May.

Carya Nutt. HICKORY.

- C. ovata** (Miller) K. Koch. SHELLBARK HICKORY.

Hillsides, meadows and river banks; frequent in the northern portion. Fl., mid-May, early June.

- C. tomentosa** Nutt. (*C. alba* of Gray's Man., ed. 7.) MOCKERNUT HICKORY.

Frequent northward, and occurring southward to Worcester County. Fl., May.

- C. ovalis** (Wang.) Sargent. (*C. microcarpa* Nutt. of Gray's Man., ed. 7.) SMALL PIGNUT. SMALL-FRUITED HICKORY.

Infrequent on dry hillsides in the northern portion. Fl. May.

- C. glabra** (Mill.) Spach. (Incl. var. *villosa* (Sargent) Robinson.) PIGNUT HICKORY.

Common on dry hillsides of the Piedmont area; infrequent southward to Sussex and Wicomico Counties. Fl., May.

- C. cordiformis** (Wang.) K. Koch. (*C. amara* Nutt.) BITTERNUT HICKORY.

Frequent along streams in the northern portion; becoming rare southward: Capeville (No), *F. R. Fosberg*, 14669, in 1938, (P); 3½ mi. w. n. w. of Longwoods (Ta), *Earle*, 3756, 6 Sept. 1942 (A).

BETULACEAE (BIRCH FAMILY)

Corylus L. HAZEL.

C. americana Walt. HAZEL NUT.

Frequent in thickets and fencerows in the northern part; infrequent southward: near Greensboro (Ca), *M. J. Fisher* in 1938 (P); several collections in Talbot County, *Earle* in 1937 and 1940 (P). Fl., April, May; frt., July.

C. cornuta Marsh. (*C. rostrata* Ait.) BEAKED HAZEL NUT.

Rare in rocky woods along the Brandywine Creek near Wilmington: east bank of creek, opposite duPont's upper powder mill, *E. Tatnall* in 1843 (D), *William Tatnall* in 1888 (D). Fl., April, May; frt., July.

Ostrya Scop.

O. virginiana (Mill.) K. Koch. HOP HORNBEAM.

Rare; rocky woods of New Castle County: Mt. Cuba, *Commons* in 1886 (A), and later collectors; east bank of Brandywine Creek, in Brandywine Park, Wilmington, *E. Tatnall* in 1843 (D); west bank of Brandywine Creek, at Wills Rock, Wilmington, *R. R. Tatnall*, in 1934 and 1935 (T, P, G); in an open field, Holly Oak, *J. B. Brinton*, in 1888 (P). Late April, early May.

Carpinus L.

C. caroliniana Walt. var. **virginiana** (Marsh.) Fernald. See *Rhodora* 37, 425. 1935. IRONWOOD. HORNBEAM.

Banks of streams; common in the Piedmont; less frequent southward to the Virginia line. Late April, May.

Betula L. BIRCH.

B. lenta L. SWEET BIRCH.

Frequent in wooded stream valleys of the Piedmont area. Fl., April, May.

B. lutea Mx. f. YELLOW BIRCH.

One collection: north side of Smyrna River, near Smyrna (NC), *Commons & Tatnall*, in 1894 (D). Fl., May.

B. nigra L. BLACK OR RIVER BIRCH.

Common in low ground along streams, Piedmont, and Coastal Plain as far south as the Virginia line. Fl., April, May.

(Explanatory notes referring to the illustrations on the other side of this sheet.)

COMMON ALDER, (*Alnus serrulata*)

Near the ends of the twigs are the staminate catkins, tightly closed, and the much smaller immature fertile catkins; both groups awaiting the coming of spring before opening. Lower on the stem are the remains of the fertile catkins of the preceding year, which have shed their seeds.

SEASIDE ALDER, (*Alnus maritima*)

Each of the two twigs at the left bears one small fertile catkin, recently fertilized. The staminate catkins, formerly attached to the extreme ends of these twigs, have shed their pollen and fallen off. The middle twig bears last season's fertile catkins, now nearly mature. On the right are shown catkins which matured and shed their seeds the previous season.



Above: COMMON ALDER, (*Alnus serrulata*)

Below: SEASIDE ALDER, (*Alnus maritima*)

The specimens were all collected on the same date, 21 November, 1946, and are shown about three-quarters natural size. See page 99, and descriptive notes on the reverse of this sheet.

B. populifolia Marsh. WHITE OR GRAY BIRCH.

Known only from near Townsend (NC), where it was collected by *Commons* in 1868 (A). Fl., April, early May.

Alnus Hill. ALDER.**A. serrulata** Willd. (*A. rugosa* (duRoi) Spreng.) COMMON ALDER.

Wet thickets and stream banks; common throughout, at least as far south as the Virginia line.

Catkins opening in the spring (late Feb. to April).

A. maritima (Marsh.) Muhl. SEASIDE ALDER.

Frequent on borders of streams and ponds, in Sussex, Dorchester, Wicomico and Worcester Counties.

In sharp contrast to the Common Alder, the Seaside Alder blooms in the autumn (mid-August, September), at which time fertilization takes place. The fertile catkins do not mature until the following September, that is, until the flowering period comes round again, so that flowers and ripe fruit appear simultaneously.

This shrub, or tree, is endemic on our Peninsula, and probably does not occur anywhere else. "What appears to be the same plant was collected by Hall on the banks of the Red River in the Indian Territory. On the western tree, however, more information than now exists is needed." It occurs in closely related forms, in Japan (var. *japonica*), and in Manchuria (var. *arguta*). See C. S. Sargent, in "Garden and Forest" iv, 268. (1891).

FAGACEAE (OAK FAMILY)

Fagus L. BEECH.**F. grandifolia** Ehrh. (Incl. var. *caroliniana* Fern. & Rehd.)

Common in rich woods of the Piedmont; less frequent on the Coastal Plain. Fl., late April, early May.

Reported by R. M. Harper as "rather common from Somerset County southward."

Castanea Hill. CHESTNUT.**C. dentata** (Marsh.) Borkh. CHESTNUT.

Common in the Piedmont province; less so southward on the Coastal Plain, at least to Wicomico County. Fl., late June, July.

In recent years largely destroyed by blight, and represented chiefly by short-lived sprouts from old stumps.

C. pumila (L.) Mill. CHINQUAPIN.

Frequent in Cecil, New Castle and Sussex Counties, and probably elsewhere. Fl., May to July.

Quercus L. OAK.**Q. alba** L. WHITE OAK.

Abundant and widely distributed. Fl., May.

Q. stellata Wang. POST OAK.

Frequent on dry rocky soil of the Piedmont; common on sandy soil of the Coastal Plain, southward to Accomac County. Fl., May.

× **Q. Fernaldii** Trel. (? *Q. stellata* × *Q. alba*.)

Rare: on bank of Choptank River, near Goldsboro (Ca), *Otis* in 1924 (A). Determined by Arnold Arboretum.

Q. lyrata Walt. OVER-CUP OAK.

Infrequent on river bottoms and banks of streams, in New Castle, Sussex, Wicomico and Worcester Counties. Fl., May, after the leaves appear.

Q. macrocarpa Mx. MOSSY-CUP OAK.

A single tree, believed to have been spontaneous, formerly grew in open ground at Lovering Ave. and Rodney St., Wilmington, (D, A, T). The site is now occupied by dwellings.

Q. bicolor Willd. SWAMP WHITE OAK.

Infrequent in wet ground near streams and swamps in New Castle and Cecil Counties. Fl., May.

Q. Prinus L. (*Q. Michauxii* Nutt.) BASKET OAK.

Infrequent, but rather widely distributed; woods, fencerows and margins of ponds. Fl., May.

A southern species.

Q. Muhlenbergii Engelm. YELLOW OAK.

Rare: on serpentine soil near Centreville (NC), *Commons* in 1878, according to E. Tatnall (MS Catalog), no specimen seen; White House Farm, 3½ mi. w. n. w. of Longwoods (Ta), *Earle*, 3776, 6 Sept. 1942 (A, P).

Q. prinoides Willd. DWARF CHESTNUT OAK.

Rare, in northern Delaware: Dixon's woods, 2 mi. s. of Centre-

ville (NC), in serpentine soil, *Commons*, in 1868, 1876 and 1879 (A); low ground near Christiana, *E. Tatnall* in 1895 (D). Fl., May.

Q. montana Willd. (*Q. Prinus* of authors). ROCK CHESTNUT OAK.

Common on rocky banks of the Piedmont; infrequent in dry sandy soil, southward to Sussex and Talbot Counties. Fl., May.

Q. virginiana Mill. LIVE OAK.

Known on this Peninsula from a single shrubby specimen in a thicket just s. of Townsend (No): *Fernald, Long & Fogg*, 5294, in 1935 (G, T), *R. R. Tatnall*, 3369, 1 June 1937 (T, A), and 4205, 8 June 1939 (T).

Q. rubra L. (*Q. borealis* Mx. f. var. *maxima* Ashe. See House: Pl. of N. Y. State (1924); *Svenson: Rhodora* 41, 521-524. 1939.) RED OAK.

Frequent in dry hilly woods of the Piedmont; infrequent in dry sandy soil of the Coastal Plain. Fl., late April, May.

Q. palustris Muench. PIN OAK.

Common and widely distributed. Fl., late April, early May.

Q. coccinea Wang. SCARLET OAK.

Frequent in dry soil, preferring hilly woods of the Piedmont; infrequent on the Coastal Plain. Fl., May.

Q. velutina Lam. BLACK OAK.

Frequent in dry woods and fencerows of the Piedmont; less common on the Coastal Plain southward at least to Sussex and Talbot Counties. Fl., May.

Q. falcata Mx. (See the references under *Q. rubra*.) SPANISH OAK.

Frequent in sandy soil of the Coastal Plain, northward to the Fall Line. Fl., late April, May.

Q. ilicifolia Wang. SCRUB OAK.

Rare in our area: near Laurel (S), *Commons* in 1874 (A); near Newark (NC), *Commons* in 1892 (A). Fl., May.

Q. nigra L. WATER OAK.

Common in wet ground of the Coastal Plain, from Cape Charles northward to Sussex County. Fl., May.

Q. marilandica Muench. BLACK JACK OAK.

Frequent on the Coastal Plain, in dry, sterile soil; rare in the Piedmont: rocky woods w. n. w. of Rock Springs (Ce), *Long*, 32199, in 1925 (A); rocky woods below Bald Friar (Ce), *Long*, 42985, in 1934 (A). Fl., early May.

Q. imbricaria Mx. SHINGLE OAK.

Rare, in New Castle County: "near Wilmington," *Commons* in 1863 (U); a tree in margin of woods, along road from Stanton to Christiana, $\frac{1}{2}$ mi. s. of Stanton Station, is tentatively referred to this species.

Q. Phellos L. WILLOW OAK.

Common throughout the Coastal Plain, preferring wet, sandy soil; occasional in the Piedmont. Fl., early May.

× **Q. subfalcata** Trel. ("Q. *Otisii*" Sarg. A hybrid, probably of *Q. Phellos* and *Q. falcata*.)

A single tree: corner of woods along the highway, and just inside the fence, $\frac{1}{4}$ mi. w. of Wilson Station (NC), (A, T).

× **Q. heterophylla** Mx. f. (Probably a hybrid, with *Q. Phellos* as one parent. See Sargent: *Man. Trees of N. A.*)

Frequent on or near the Fall Line in New Castle County; occasional southward to Worcester County.

URTICACEAE (NETTLE FAMILY)

Ulmus L. ELM.

U. rubra Muhl. (*U. fulva* Mx. Fernald: *Rhodora* 47, 203-204. 1945.) SLIPPERY ELM.

Common along streams and on rocky hillsides of the Piedmont; apparently rare on the Coastal Plain: along King's Creek, n. e. of Easton (Ta), *Earle*, 1394, 9 May 1937 (P); 4 mi. n. e. of Trappe (Ta), *Earle*, 2780, 6 July 1940 (P). Fl. late April.

U. americana L. WHITE ELM.

Frequent in both Piedmont and Coastal Plain provinces. Fl. late March, early April.

Celtis L. HACKBERRY.

C. occidentalis L.

Frequent in the Piedmont of New Castle and Cecil Counties;

Beverly Hall
+ Mary Clark

infrequent on the Coastal Plain, southward to the Virginia line.
Fl. late April, May. A tall tree.

Var. *canina* (Raf.) Sargent.

Occasional at or north of the Fall Line, in New Castle and Cecil Counties.

Var. *crassifolia* (Lam.) Gray.

Rare, in the valleys of the Brandywine and Octoraro Creeks: Wilmington, *Commons* in 1897 (A); Porters Bridge (Ce), *Pennell*, 14572, in 1928 (A).

C. pumila (Muhl.) Pursh var. *georgiana* (Small) Sargent.

One collection: Centreville (NC), *Commons* in 1865, "6 feet high" (A).

A shrub or small tree to 12 feet high.

Cannabis L. HEMP.

C. sativa L.

Infrequent, in waste ground. Late June to early August.
Adv. from Asia.

Humulus L. HOP.

H. Lupulus L. (Incl. *H. americanus* Nutt.) (See Bailey: "Manual of Cultivated Plants" (1924), pp. 239-240.)

Native, or occasionally escaping. Late July, Aug.

H. scandens (Lour.) Merrill. (*H. japonicus* Sieb. & Zucc.)

A rare escape from cultivation: Smyrna (NC), *Long*, 13 Aug. 1908 (A). Introd. from Japan.

Maclura Nutt. OSAGE ORANGE.

M. pomifera (Raf.) Schneider. (*M. aurantiaca* Nutt.)

Extensively planted for hedges, and often spontaneous. Fl. early June.

Broussonetia L'Hér. PAPER MULBERRY.

B. papyrifera (L.) Vent.

Cultivated, and frequently escaping to roadsides. May.
Introd. from Asia.

Morus L. MULBERRY.

M. rubra L. RED MULBERRY.

Infrequent throughout. Fl. early May; frt. ripe in July.

M. alba L. WHITE MULBERRY.

Sparingly escaped from cultivation in New Castle, Kent (Md.) and Talbot Counties, and probably elsewhere. Introd. from Europe.

Urtica L. NETTLE.

U. dioica L. STINGING NETTLE.

Infrequent in waste ground and on roadsides in the northern part of the Peninsula. Nat. from Europe.

Laportea Gaud.

L. canadensis (L.) Gaud. WOOD NETTLE.

Frequent in rich woods and low ground of the northern part of the Peninsula. Aug., Sept. A stinging herb.

Pilea Lindl.

P. pumila (L.) Gray. RICHWEED.

Frequent in moist woods and river bottomland of both provinces. Aug., Sept. Smooth and stingless.

Boehmeria Jacq.

B. cylindrica (L.) Sw. FALSE NETTLE.

Common throughout, in moist woods. July, Aug. Stingless.

Var. *scabra* Porter.

One collection: near Goldsboro (Ca), *Earle*, 1573, 21 Aug. 1937 (P).

Parietaria L. PELLITORY.

P. pennsylvanica Mill.

Rare: Conowingo (Ce), along the Susquehanna River, *Long*, 32177, 3 May 1925 (A). June. Not stinging.

P. debilis Forster.

Waif in crevice between sidewalk and brick dwelling, west side of Jackson Street, just south of Delaware Ave., Wilmington, *R. R. Tatnall*, 5217, 8 June 1945 (T, A). Adv. probably from the Pacific coast.

SANTALACEAE (SANDALWOOD FAMILY)

Comandra Nutt.

C. umbellata (L.) Nutt. BASTARD TOAD FLAX.

Frequent in dry or moist, usually sandy soil, Piedmont and

Comandra LORANTHACEAE—POLYGONACEAE *Rumex*

Coastal Plain. Not known from south of the Virginia line. Mid-May, June.

Parasitic on the roots of other plants.

LORANTHACEAE (MISTLETOE FAMILY)

Phoradendron Nutt.

P. flavescens (Pursh) Nuttall. AMERICAN MISTLETOE.

Frequent on the Coastal Plain. We have no records from the portion of the Peninsula north of the Fall Line. Fl., mid-Sept., Oct. (Probably).

Parasitic on trees, chiefly Black Gum and Red Maple.

ARISTOLOCHACEAE (BIRTHWORT FAMILY)

Asarum L.

A. canadense L. WILD GINGER.

Common in rich woods of the Piedmont province. Late April, May.

Var. *reflexum* (Bicknell) Robinson.

Rare: "north of Mt. Cuba Station" (NC), *Van Pelt*, 22 May 1904 (A). May.

Aristolochia L.

A. Serpentaria L. VIRGINIA SNAKEROOT.

Infrequent in rich woods of the Piedmont, and in sandy pine woods of the Coastal Plain southward to Wicomico County. Fl., late May; frt., July.

POLYGONACEAE (BUCKWHEAT FAMILY)

Rumex L. DOCK. SORREL.

R. crispus L. CURLED DOCK.

Common in cultivated and waste ground, and in beach sand. May, June. Nat. from Europe.

R. mexicanus Meisn.

One collection: in waste ground, Marshallton (NC), *Otis*, 22 June 1917 (A).

R. verticillatus L. SWAMP DOCK.

Frequent in swamps and on beaches of the Coastal Plain. June to early August.

R. obtusifolius L. BITTER DOCK.

Common weed in waste places. June, July. Introd. from Europe.

R. pulcher L.

Rare, in waste ground and coastal sands, chiefly southward: waste ground, Wilmington, *Commons*, 9 July 1898 (A, D); waste ground, Accomac, *R. R. Tatnall*, 42, 31 May 1928 (T), and 335, 1 June 1929 (G); beach sand at Cape Charles City (No), *R. R. Tatnall*, 1776, 27 May 1933 (T, P, G). May, June.

R. hastatulus Baldw.

On coastal sands; one collection: Wallops Island (Ac), *McAtee* in 1913 (U).

R. Acetosella L. SHEEP SORREL.

A common weed in fields and waste places. May, June. Nat. from Europe.

Polygonum L. KNOTWEED. SMARTWEED.**P. glaucum** Nutt. (*P. maritimum* L.) SEASIDE KNOTWEED.

Frequent on beaches of the Atlantic coast. July.

P. prolificum (Small) Robinson.

Frequent on beaches and borders of salt marshes. Frt., Aug., Sept.

P. aviculare L. DOOR WEED.

A common weed in door-yards, foot paths and waste places. Frt., late Aug. to Oct.

P. neglectum Besser. (*P. aviculare* var. *angustissimum* Meisn.)

Rare: Elk Neck (Ce), *E. C. and G. M. Leonard*, 5710, 12 Sept. 1925 (U); fields, Chincoteague Island (Ac), *M. T. Travis*, 681, 23 July 1938 (P).

P. erectum L.

Frequent but not often collected; in cultivated ground and waste places. Frt., Aug., Sept.

P. ramosissimum Mx.

Infrequent, in sandy soil near the coast. Frt., Sept., Oct.

P. atlanticum (Robinson) Bicknell.

Frequent on beaches and in tidal marshes along the Atlantic coast of Kent (Del.) and Sussex Counties. Frt., Sept., Oct.

P. Bellardi All.

A waif on river shores and in waste places: Wilmington, *Commons*, in 1897 and 1899 (A).

P. tenue Mx.

Frequent; sandy banks and fields, including serpentine soil, Piedmont and Coastal Plain. Frt. mid-Aug., Sept.

P. lapathifolium L.

Frequent in New Castle County, in waste ground and on shores of Delaware River; occasional farther south on the Coastal Plain: Chestertown (Ke), *Vanatta*, 11 Aug. 1905 (A). Frt. Aug., Sept.

P. densiflorum Meisn.

Rare, in sandy soil of the seacoast: Lewes (S), *Commons*, 4 Aug. 1898 (A); Chincoteague Island (Ac), *R. R. Tatnall*, 130, 13 Sept. 1928 (T, P, G).

P. natans A. Eaton. (*P. amphibium* of authors.)

One collection: 5 mi. s. e. of Easton (Ta), *Earle*, 3069, 3 Sept. 1940 (P). Frt. late Aug., Sept.

P. coccineum Muhl. (*P. Muhlenbergii* (Meisn.) Watson.)

Infrequent, in swampy places on the Coastal Plain of New Castle County. Frt. late Aug., Sept.

P. pensylvanicum L.

Common throughout; wet fields, waste ground, beaches and salt marshes. Frt. mid-Aug. to Oct.

Var. **laevigatum** Fern.

Frequent from the Fall Line at least as far south as Worcester County, in similar habitats.

P. Careyi Olney.

Rare, in moist soil: Georgetown (S), *C. S. Williamson*, in 1908 and 1909 (A); Georgetown, *Long & Bartram*, 5 July 1913 (A); savanna 1 mi. n. of Georgetown, *R. R. Tatnall*, 4324, 8 Aug. 1939 (T, P). Frt., July, Aug.

P. Hydropiper L. var. **projectum** Stanford. WATER PEPPER.

Infrequent; low ground and vacant city lots, New Castle County.

P. punctatum Ell. (*P. acre* HBK. in part.)

Common throughout, in woods, and on beaches and roadsides. Frt., late July to Sept.

P. robustius (Small) Fernald. (*P. punctatum* var. *robustius* Small.)

Rare, in swampy ground: tidal shore of Long Creek, 1 mi. n. of Chesapeake City (Ce), *Long*, 41118, 15 July 1933 (A); same place and date, *R. R. Tatnall*, 1926 (T); swamp 1 mi. s. of Church Creek (Do), *C. F. Reed*, 550, 27 Aug. 1939 (U).

P. orientale L. PRINCE'S FEATHER.

A frequent escape from gardens. Introd. from India.

H **P. Persicaria** L. LADY'S THUMB.

Common in low ground. Frt., mid-Aug., Sept. Nat. from Europe.

P. longisetum DeBruyn. (See S. F. Blake: *Rhodora* 34, 146. 1932.)

Rather recently introduced from Asia, and spreading in New Castle and Cecil Counties. Fl. mid-Sept., early Oct.

P. opelousanum Riddell.

Infrequent in ditches and wet thickets on the Coastal Plain.

P. setaceum Baldwin.

One collection: wet ditch 2 mi. n. of Georgetown (S), *Fogg*, 4479, 19 July 1932 (P).

P. hydropiperoides Mx. MILD WATER PEPPER.

Common in wet places. Frt. late July to Sept.

P. arifolium L. (HALBERD-LEAVED TEAR THUMB.)

Common throughout, in wet places. Frt. late Aug. to Oct;

P. sagittatum L. ARROW-LEAVED TEAR THUMB.

Common throughout, in wet places. Frt. mid-Aug. to Sept.

P. Convolvulus L. BLACK BINDWEED.

Frequent in waste places. Nat. from Europe.

Polygonum POLYGONAC.—CHENOPODIAC. *Chenopodium*

P. scandens L. CLIMBING FALSE BUCKWHEAT.

Frequent in moist thickets, climbing over shrubs. Frt. late Aug., Sept.

P. dumetorum L.

Infrequent; woods, thickets and open ground.

P. cristatum Engelm. & Gray.

Infrequent in the Coastal Plain: near Chestertown (QA), *E. G. Vanatta*, 15 Aug. 1903 (A); pine woods w. of Kiptopeke (No), *Fernald, Long & Fogg*, 5300, 14 Oct. 1935 (P).

Associated with *P. dumetorum*, from which it is distinguished by its dentate calyx-wings.

P. cuspidatum Sieb. & Zucc.

Cultivated, and frequently escaping to fencerows and woods. Introd. from Japan.

P. sachalinense F. Schmidt. SACHALINE.

Occasionally escaping, and rapidly spreading: roadside near Bacon Hill (Ce), *Long*, 54384, 26 May 1940 (A), and 57004, 13 July 1941 (A).

Tovara Adans.

T. virginiana (L.) Raf. (*Polygonum virginianum* L.) VIRGINIA KNOTWEED.

Common in rich woods and thickets, Piedmont and Coastal Plain. Frt. Aug., Sept.

Fagopyrum L.

F. esculentum Moench. BUCKWHEAT.

Escaping from cultivation.

Polygonella Mx.

P. articulata (L.) Meisn.

Dry, sandy soil, preferring the seacoast, but also found inland; frequent in Sussex and Worcester Counties, and occasional in Kent County, Delaware. Fl. and frt. Sept., Oct.

CHENOPODIACEAE (GOOSEFOOT FAMILY)

Chenopodium L. GOOSEFOOT.

C. ambrosioides L.

A weed of waste places, beaches, and borders of salt marshes; common throughout. Fl. mid-Aug., Sept. Bay Head.

Var. anthelminticum (L.) Gray.

In the same habitats as the species, but less common, and often hardly distinguishable from it.

Var. chilense (Schrader.) Spegazz. (See *Rhodora* 44, 394. 1942.)

Infrequent, in waste ground, Piedmont and Coastal Plain.

Differs from the species in having the stems white-villous.

C. Botrys L. JERUSALEM OAK.

Infrequent; on railroad ballast and roadsides. Nat. from Europe.

C. glaucum L. OAK-LEAVED GOOSEFOOT.

Infrequent in waste ground, New Castle County. Fl. Aug. Nat. from Europe.

C. hybridum L. MAPLE-LEAVED GOOSEFOOT.

Waste places; infrequent and not recently collected.

C. Vulvaria L. STINKING GOOSEFOOT,

Streets and dumps in Wilmington; not collected since 1900. Introd. from Europe.

C. album L. LAMB'S QUARTERS.

A common weed in waste and cultivated ground. Introd. from Europe.

C. Berlandieri Moq.

Rare: dump n. of Fair Hill (Ce), *Benner*, 5320, 7 Oct. 1933 (A); waste ground $\frac{1}{2}$ mi. n. of New Castle, *Benner*, 8602, 1 Oct. 1938 (A), (det. M. L. Fernald).

C. Boscianum Moq.

Rare: dry woods at Grove Point (Ce), w. of Cecilton, *Long*, 45015, 13 Oct. 1934 (A).

C. murale L.

Waste ground and city dumps, infrequent. Adv. from Europe.

C. polyspermum L.

Rare weed in waste ground: North East (Ce), *Otis* in 1911 (D). Adv. from Europe.

Atriplex L. ORACH.

H A. patula L. var. hastata (L.) Gray.

Common on salt and brackish shores on both sides of the Peninsula. Frt. Sept., Oct.

✓ H A. arenaria Nutt.

Infrequent on beaches of the Atlantic coast, Sussex County and southward. Frt. late Aug., Sept. *Beard Hill*

H S. (*bigelovii*) *mucronata* Bigel.) *torreyi* Salicornia L. SAMPHIRE.

Coastal salt flats, s. e. Sussex County and southward; less common than either of the following species. Frt. Oct., Nov.

H S. europaea L.

Common on salt meadows and tidal flats, from Kent (Del.) County southward. Frt. Oct., Nov.

H S. (*ambigua* Mx.) *virginica* L.

Infrequent in salt meadows and on borders of salt marshes, Sussex County and southward. Frt. Oct., Nov.

Suaeda Forsk. SEA BLITE.

✓ H S. maritima (L.) Dumort.

Rare, in salt marshes: Franklin City (Ac), *S. Brown*, 22 Sept. 1907 (A). Frt. Sept., Nov. *S. of Del. Bay*

✓ S. linearis (Ell.) Moq.

Infrequent, in sands of the seacoast, Sussex County and southward. Frt. Sept., Nov. *S. of Del. Bay*

Bassia All.

H B. hirsuta (L.) E. B. Bartram.

Rare, on borders of salt marshes: Chincoteague Island (Ac), wharf on the bay shore, in the village, *M. T. Travis*, 679, 23 July 1938 (A); Ocean City (Wo), bay shore opposite Ninth Street, *F. J. Hermann*, Oct. 1941. Frt. Sept., Oct. *Beard Hill*

Salsola L. SALTWORT.

H S. Kali L.

Common on salt and brackish shores. Frt. late Sept., Nov.

AMARANTHACEAE (AMARANTH FAMILY)

Amaranthus L. PIGWEED.

A. retroflexus L.

Frequent in cultivated and waste ground. Adv. from tropical America.

A. hybridus L. (Including *A. cruentus* L. See D. C. Wheeler, *Bartonia* 21, 4. 1942.)

Frequent in old fields, dumps and waste places. Nat. from tropical America. Frt. Sept., Oct.

A. caudatus L.

A rare escape from cultivation: Wilmington, dump at Fourth Street bridge *Commons & Tatnall*, 12 July 1896, according to E. Tatnall (MS Catalog).

A. albus L. (*A. graecizans* of Gray's Man., ed. 7. See Fernald: *Rhodora* 47, 139-140. 1945). TUMBLEWEED.

Waste ground and roadsides, New Castle County; seldom collected: Centreville (NC), *Commons*, Aug. 1875 (A); roadside, Wilson Station, *C. O. Houghton*, 15 Sept. 1927 (UD).

A. graecizans L. (*A. blitoides* Wats.).

In streets of Wilmington; not collected since 1897. Introd. from western U. S.

A. spinosus L. THORNY AMARANTH.

Infrequent, in waste places. Nat. from tropical America.

A. pumilus Raf.

Rare, on sea beaches: southeastern Sussex County, *Commons*, 10 Sept. 1875. Frt. Aug., Sept.

Acnida L. WATER HEMP.

A. cannabina L.

Common on sea beaches, and in fresh to salt tidal mud. Frt. Aug., Sept.

A. tamariscina (Nutt.) Wood.

One collection: in a "moist field, unusual habitat," at Blue Ball Inn, near Wilmington, *Commons*, 21 Sept. 1896 (A).

Froelichia AMARANTHAC.—CARYOPHYLLAC. *Paronychia*

Froelichia Moench.

✓ # *F. floridana* (Nutt.) Moq.

Locally abundant and spreading; dry sandy fields and roadsides, Sussex, Wicomico and Dorchester Counties. Late July to Sept. *Downy - Aug.*

PHYTOLACCACEAE (POKE FAMILY)

Phytolacca L.

✓ *P. americana* L. (*P. decandra* L.) POKE-WEED.

A weed of waste ground and meadows; common throughout. June to Aug. *Downy Aug.*

NYCTAGINACEAE (FOUR-O'CLOCK FAMILY)

Oxybaphus L'Hér.

O. nyctagineus (Mx.) Sweet.

One collection: roadside bank, 2 mi. s. w. of Queen Anne (Ta), R. R. Tatnall, 3840, 7 June 1938 (T, A, P). Adv. from middle-western U. S.

AIZOACEAE (CARPET-WEED FAMILY)

Sesuvium L. SEA PURSLANE.

S. maritimum (Walt.) BSP.

Infrequent; in sands of the seashore, Sussex County and southward. June to Sept.

Mollugo L. CARPET-WEED.

✓ # *M. verticillata* L.

Common in city streets and waste ground, and on coastal sands, New Castle County and southward. July to mid-Sept.

A weed, native of tropical or sub-tropical America. *By Bush.*

CARYOPHYLLACEAE (PINK FAMILY)

Scleranthus L.

S. annuus L. KNAWEL.

Frequent on the Coastal Plain, in sandy, usually cultivated, soil. May, June. Nat. from Europe.

Paronychia Adans. WHITLOW-WORT.

P. canadensis (L.) Wood. (*Anychia canadensis* (L.) BSP. See Fernald: *Rhodora* 38, 416-421. 1936.)

Infrequent in dry woods of the Piedmont, and in dry sandy soil of the Coastal Plain, southward at least to Sussex County. Mid-June to August.

P. fastigiata (Raf.) Fernald. (*Anychia polygonoides* Raf.)

Infrequent in dry woods, Piedmont, and southward on the Coastal Plain. Late June to October.

Var. **paleacea** Fernald. See *Rhodora* 38, 418-421. 1936.

Rare: TYPE collection, Mt. Cuba (NC), *Commons*, 30 July 1875 (G, A).

Spargularia J. & C. Presl. SAND SPURRY.

S. rubra (L.) J. & C. Presl.

Infrequent in sandy soil of the Coastal Plain. June.

S. marina (L.) Griseb. (Including *S. salina* Presl.)

Frequent on salt or brackish sands of sea beaches and estuaries. Early June to September.

Spargula L. SPURRY.

S. arvensis L.

Rare weed in cultivated ground: fields, Farnhurst (NC), *Commons*, 2 June 1868 (A); 2 mi. n. w. of Capeville (No), *R. R. Tatnall*, 2619, 2 June 1935 (T, G, P). May, early June. Nat. from Europe.

Sagina L. PEARLWORT.

S. decumbens (Ell.) T. & G.

Frequent; dry, sandy roadsides and woods, chiefly on the Coastal Plain. May, June.

S. procumbens L.

Common in crevices of brick sidewalks in Wilmington; occasional on borders of salt marshes: Lewes (S), *Commons*, 4 Aug. 1898 (A); 2 mi. n. w. of Woodland Beach (K), *Larsen*, 528, 21 June 1934 (P). Mid-May, June.

Corrigiola L.

C. littoralis L.

One collection: on ballast of old railroad at east end of Vienna bridge (Wi), 2¾ mi. w. of Mardela Springs, *R. R. Tatnall*, 4585, 2 Aug. 1940 (T, A, G). A waif from Europe.

Arenaria L. SANDWORT.

A. peploides L. var. **robusta** Fernald.

Rare, on beaches of the Atlantic Ocean: 1 mi. s. of Bethany Beach (S), *Fogg*, 11267, 28 Aug. 1936 (P), and later collectors; 2½ mi. s. of Fenwick Island (Wo), (*A. V. Smith*), *R. R. Tatnall*, 4652, 4 Aug. 1940 (T, P, A). Early May, June.

A. serpyllifolia L. THYME-LEAVED SANDWORT.

Common; sandy fields and dry banks, Piedmont and Coastal Plain. May, June. Nat. from Europe.

A. stricta Mx.

Rare, on serpentine soil, New Castle County: near Centreville, *Commons*, in 1872 and 1874 (A, D).

A. caroliniana Walt.

Known from a single collection: near Little Hill Church (S), ½ mi. n. e. of Pepperbox, in dry pine barrens, *Commons*, 5 Aug. 1874 (A). June, July.

Stellaria L. CHICKWEED.

S. uliginosa Murray.

Rare, in spring water, Piedmont province: springheads near Centreville (NC), *Commons* in 1868 and later (A); Mt. Cuba (NC), *Commons* in 1875 (A); Bald Friar (Ce), *J. J. Carter*, 3 June 1905 (A); brook near Point Lookout (NC), ½ mi. n. e. of Centreville, *R. R. Tatnall*, 14 June 1926 (T). Mid-May to mid-July.

S. longifolia Muhl.

Infrequent, in wet ground, Piedmont province. Mid-May, June.

S. graminea L.

Infrequent in moist grassy places on the Coastal Plain; occasional in streets of Wilmington. Late May, June. Introd. from Europe.

S. pubera Mx. GREAT CHICKWEED.

Infrequent in rich woodlands, banks of the Susquehanna River: ½ mi. n. w. of Octoraro Station (Ce), *L. F. A. Tanger*, 3024, 27 April 1939 (A); 1¼ mi. w. of Rowlandsville (Ce), *Long*, 56349 (A), and *R. R. Tatnall*, 4822, 30 April 1941 (T, G). April, May.

S. media (L.) Cyrill. COMMON CHICKWEED.

Common throughout. Late March, April. Nat. from Europe.

S. aquatica (L.) Scop.

Frequent on muddy banks of the Brandywine Creek, from the state line nearly to tidewater. June, mid-July. Introd. from Europe.

Cerastium L. MOUSE-EAR CHICKWEED

C. arvense L.

Rare, in rocky soil of the Piedmont: "Rocky places" (NC), *E. Tatnall*, without date (D); Bald Friar (Ce), *Fogg*, 1901, 14 May 1927 (P, A); woods 1 mi. s. of Rowlandsville (Ce), *R. R. Tatnall*, 5213, 22 May 1945 (T).

Var. **villosum** Hollick & Britton.

Common on serpentine soil of New Castle and Cecil Counties. Late April to June.

C. vulgatum L. LARGER MOUSE-EAR CHICKWEED.

Common throughout, in fields and waste places. May, June. Nat. from Europe.

C. viscosum L. MOUSE-EAR CHICKWEED.

Frequent in grassy places, Piedmont and Coastal Plain. May, June. Nat. from Europe.

C. semidecandrum L.

Rare, in dry sandy soil of the Coastal Plain: roadside at cross-roads 1 mi. n. of Bethel (S), *R. R. Tatnall*, 3678, 7 May 1938 (T, P); same place and date, *Long*, 51950 (A). Adv. from Europe.

C. nutans Raf. NODDING CHICKWEED.

Common in woods and meadows of New Castle and Sussex Counties, and probably farther south. Late April, May.

Holosteum L. JAGGED CHICKWEED.

H. umbellatum L.

Locally abundant in dry grassy soil of fields and roadsides; known from New Castle, Kent (Del.), Sussex and Caroline Counties. Mid-April, early May. Nat. from Europe.

Agrostemma L.

A. Githago L. CORN COCKLE.

Common weed of cultivated ground. Introd. from Europe. May, June.

Lychnis L. CAMPION.

L. coronaria (L.) Desr. MULLEIN PINK.

Cultivated, and occasionally established in waste ground. Introd. from Europe.

L. dioica L. RED CAMPION.

Rare, in waste ground: sandy woods, $\frac{1}{2}$ mi. s. of Laurel (S), Fogg, 1711, 16 June 1926 (P). Adv. from Eurasia.

L. alba Mill.

Roadsides and waste ground; frequent in northern Delaware; infrequent southward to Sussex and Talbot Counties. Early May to mid-July. Introd. from Europe.

Silene L. CATCHFLY. CAMPION.

S. conica L.

One collection: field, Selbyville (S), *J. J. Carter*, 18 May 1910 (A). Adv. from Europe.

S. antirrhina L. SLEEPY CATCHFLY.

Frequent in dry soil of the Piedmont; occasionally collected southward to Worcester County. Late May, June.

S. Armeria L. SWEET WILLIAM CATCHFLY.

An occasional escape from cultivation; known from a few collections in New Castle and Sussex Counties. Adv. from Europe.

S. dichotoma Ehrh.

Rare: Rock Springs (Ce), *J. J. Carter*, 5 Aug. 1905 (A); Salisbury (Wi), *J. J. Carter*, 15 July 1904 (A). Introd. from Europe.

S. noctiflora L. NIGHT-FLOWERING CATCHFLY.

Infrequent in cultivated ground. Nat. from Europe.

S. caroliniana Walt. var. pensylvanica (Mx.) Fernald. WILD PINK.

Frequent in dry sandy soil, Sussex County and southward. May, June.

Silene CARYOPHYLLAC.—PORTULACAC. *Claytonia*

S. virginica L. FIRE PINK.

Infrequent, in both Piedmont and Coastal Plain areas of New Castle County. June.

S. stellata (L.) Ait. f. STARRY CAMPION.

Frequent in woods and open ground of the Piedmont, and in open sandy soil southward to Queen Anne's County. July, early Aug.

S. Cucubalus Wibel. (*S. latifolia* (Mill.) Britt. & Rendle.) BLADDER CAMPION.

Rare, in the Piedmont province: field at Point Lookout (NC), $\frac{1}{2}$ mi. n. of Granogue, *R. R. Tatnall*, 1177, 17 June 1931 (T); roadside at Fair Hill (Ce), *C. O. Houghton*, 16 June 1935 (UD). Nat. from Europe.

Saponaria L.

S. officinalis L. BOUNCING BET.

Common throughout, in fields and on roadsides, June. Adv. from Europe.

S. Vaccaria L. COW-HERB.

An infrequent weed in fields and waste ground, northern New Castle County; not collected since 1897. Adv. from Europe.

Dianthus L. PINK.

D. prolifer L.

Rare, in sandy soil: near Millington (Ke). *J. B. Brinton*, 18 June 1887 (P, A); South Milford (S), *Commons & Tatnall*, 16 July 1896 (A); $\frac{1}{2}$ mi. e. of Milford (S), *Commons*, 12 Aug. 1897 (A). Nat. from Europe.

D. Armeria L. DEPTFORD PINK.

Frequent in fields and on roadsides, Piedmont and Coastal Plain, southward at least to Talbot County. June to Sept. Adv. from Europe.

PORTULACACEAE (PURSLANE FAMILY)

Claytonia L.

C. virginica L. SPRING BEAUTY.

Common in the northern portion; rare southward: $1\frac{1}{2}$ mi. e. of Goldsboro (Ca), *R. R. Tatnall*, 4123, 19 April 1939 (T, P); $2\frac{1}{2}$ mi. w. n. w. of Bellevue (Ta). *Earle*, 2003, 30 April 1939 (P); border of

Claytonia PORTULACAC.—NYMPHAEACEAE *Nymphaea*
cypress swamp, 2 mi. s. w. of Libertytown (Wo), (A. V. Smith),
R. R. Tatnall, 4428, 27 April 1940 (T, P, A). Reported from woods,
½ mi. w. of Lecato Station (Ac), A. V. Smith, May, 1943. Mid-
April, May.

Talinum Adans.

[*T. teretifolium* Pursh.

"Dry serpentine barrens, near Centreville" (NC), *Commons*, 24
June 1876 (A). Believed to have been introduced from Chester
County, Pa., by the collector.]

Portulaca L.

P. oleracea L. COMMON PURSLANE.

Common in waste and cultivated ground, New Castle County.
Nat. from Europe.

CERATOPHYLLACEAE (HORNWORT FAMILY)

Ceratophyllum L.

C. demersum L. HORNWORT.

Frequent in ponds and streams on the Coastal Plain, from the
Fall Line southward to Sussex and Talbot Counties. Frt. Aug.

NYMPHAEACEAE (WATER LILY FAMILY)

Nuphar Sibth. & Sm. SPATTERDOCK.

N. advena Ait. (*Nymphaea advena* Ait.) UPRIGHT SPATTERDOCK.

Common in ponds and slow streams, chiefly in the Piedmont.
May to Sept.

N. variegata Engelm. FLOATING SPATTERDOCK.

Rare, in ponds: Conowingo (Ce), *Pennell*, 1 July 1914 (A);
Laurel (S), *Fogg*, 1828, 14 April 1927 (P); near Seaford (S), *Earle*,
1818, 3 Sept. 1938 (P).

Nymphaea L. WATER LILY.

N. odorata Ait. (*Castalia odorata* of authors.)

Frequent in ponds and streams, north of the Virginia line.
May to Sept.

N. tuberosa Paine.

One known collection: bed of St. Georges Creek near Delaware
City (NC), *Commons & Tatnall*, 8 Sept. 1896 (D).

Nelumbo Adans.

N. pentapetala (Walt.) Fernald. (*N. lutea* (Willd.) Pers.) AMERICAN LOTUS.

Rare; ponds and slow streams: St. Jones Creek, 2½ miles below Dover (NC), *Commons* in 1863 (A); same locality, *R. R. Tatnall*, 965, 3 Aug. 1930 (T, G, P). Late July, Aug.

Said to grow also in Drawyers Creek, below Shallcross Lake (NC), (*Otis*), and in Moore's (Wiggins) Pond, 1 mi. n. w. of Townsend (NC), (*C. J. Speel*); no specimens seen from either of these localities. Reported in bloom, Aug. 1945, in the southwestern end of McGinnis Pond, 2 mi. e. of Canterbury (K), by *H. R. Baker*.

Brasenia Schreb.

B. Schreberi Gmel. (*B. peltata* Pursh) WATER SHIELD.

Infrequent throughout, in ponds and slow streams. Early June, July.

RANUNCULACEAE (BUTTERCUP FAMILY)

Ranunculus L. BUTTERCUP. CROWFOOT.

R. longirostris Godron. (*R. circinatus* Sibth.) STIFF WATER CROWFOOT.

Rare, in slow streams and ditches, New Castle County: ditches near Edgemoor, *E. Tatnall*, May 1859 (D); Cherry Island Marsh, Wilmington, *Commons*, several collections from 1863 to 1879 (A); Chesapeake and Delaware Canal, near Delaware City, *Tatnall & Commons*, 21 June 1897 (D, A).

R. flabellaris Raf. (*R. delphinifolius* Torr. See Fernald: *Rhodora* 38, 171. 1936.)

Rare, in ponds and river bottoms of the Coastal Plain: pond near Oglethorpe (NC), *E. Tatnall*, "between 1836 and 1840" (A), and in 1842 (D); cypress swamp bordering Pocomoke River, 2 mi. s. w. of Libertytown (Wo), *R. R. Tatnall*, 4248, 10 June 1939 (T).

R. ambigens Watson. (*R. obtusiusculus* Raf.) WATER-PLANTAIN SPEARWORT.

Infrequent, in ponds, ditches and swampy woods of the Coastal Plain, in New Castle, Cecil, Kent (Del.) and Caroline Counties. June, mid-July.

R. laxicaulis (T. & G.) Darby. (*R. oblongifolius* of authors, not Ell. See Fernald: *Rhodora* 41, 541-542. 1939.)

In shallow water, rooting in mud; infrequent on the Coastal Plain; Worcester County and northward to southern New Castle County, where it appears to reach its northern limit. Late May, mid-June.

R. pusillus Poir.

Frequent in ponds, ditches and low woods; along the Susquehanna River in the Piedmont, and southward on the Coastal Plain to Talbot County: ditch $2\frac{1}{2}$ mi. s. w. of Easton, *M. T. Travis*, 426, 16 April 1938 (P). May.

R. sceleratus L. CURSED CROWFOOT.

Common throughout, in meadows, ditches and tidal mud. Mid-April to June.

R. abortivus L. SMALL-FLOWERED CROWFOOT.

Common on rocky hillsides of the Piedmont, and in sandy soil of the Coastal Plain. April, May.

R. recurvatus Poir. WOOD CROWFOOT.

Frequent in rich woods, Piedmont, and Coastal Plain southward to Talbot County (*Earle*). May.

R. septentrionalis Poir. SWAMP BUTTERCUP.

Infrequent in wet places, New Castle and Cecil Counties. Late April, May.

R. hispidus Mx.

Frequent on wooded hillsides of the Piedmont; rare on the Coastal Plain: sandy woods $1\frac{1}{4}$ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4443, 28 April 1940 (T). Late April, May.

R. repens L. CREEPING BUTTERCUP.

Infrequent, in ditches and low, grassy places, Sussex, Talbot and Accomac Counties. May, June.

R. pensylvanicus L. f.

One collection: "roadside, Red Lion Creek" (NC), *E. Tatnall*, 4 July 1887 (A). Late June, July.

R. bulbosus L.

Common in fields and meadows. May, June. Nat. from Europe.

R. acris L. TALL BUTTERCUP.

Frequent in fields in the northern counties. Mid-June, July. Nat. from Europe.

R. parviflorus L.

Rare, in waste ground: Berlin (Wo), *Canby*, May 1868 (A, U); Accomac village (Ac), *R. R. Tatnall*, 43, 31 May 1928 (T). Introd. from Europe.

Thalictrum L. MEADOW RUE.**T. caulophylloides Small.**

Rare, on wooded slopes along the Susquehanna River: Conowingo (Ce), *Long & Bartram*, 1287, 1 June 1913 (A); same locality, *Long*, 42971, 6 May 1934 (A).

T. dioicum L. EARLY MEADOW RUE.

Infrequent; rocky hillsides and sandy woods, New Castle and Cecil Counties. Late April, early May.

T. revolutum DC.

Rare, in rocky woodlands: banks of Octoraro Creek (Ce), *J. J. Carter*, 21 June 1904 (A). Late May to early July.

T. polygamum Muhl. TALL MEADOW RUE.

Frequent; meadows, swamps and river banks, Piedmont area of New Castle County, and southward on the Coastal Plain to the Virginia line. June, July.

Anemonella Spach.**A. thalictroides (L.) Spach. RUE ANEMONE.**

Common in woods of the Piedmont; infrequent on the Coastal Plain. April, May.

Hepatica Hill.**H. americana (DC) Ker. (*H. triloba* of Gray's Man., ed. 7.)
LIVERWORT.**

Common in woods of the Piedmont; infrequent southward to Talbot County (*Earle*). Late March to early May.

Anemone L.

A. virginiana L. TALL ANEMONE.

Frequent in rocky woods and on dry banks of the Piedmont; rare southward to Accomac County: woods $\frac{1}{2}$ mi. w. of Greenbackville, *R. R. Tatnall*, 4338, 9 Aug. 1939 (T). June to early August.

A. quinquefolia L. (*A. nemorosa* of manuals, not L.) WOOD ANEMONE.

Common in rich woods of the Piedmont; less frequent in Coastal Plain woods, southward to Worcester County. April, May.

Clematis L. VIRGIN'S BOWER.

V. virginiana L. WHITE CLEMATIS.

Frequent in thickets and on roadsides, Piedmont, and southward on the Coastal Plain to Talbot County (*Earle*). Late July, August.

C. Viorna L. LEATHER FLOWER.

Infrequent on rocky hillsides of the Piedmont. May to July.

C. paniculata Thunb.

An infrequent or rare escape from cultivation: $\frac{3}{4}$ mi. s. w. of Easton (Ta), *Earle*, 3981, 1 Oct. 1944 (P); Mt. Pleasant (NC), *Moldenke*, in *Torrey* 45, 106-109, Dec. 1945. Introd. from Japan.

C. verticillaris L. PURPLE CLEMATIS.

Rare, in rocky woods of the Piedmont: Wooddale (NC), *Commons*, 17 May 1862, and later dates (A); along Octoraro Creek (Ce), *J. J. Carter*, 2 May 1864 (A); same, *Long & St. John*, 1 May 1916 (A, P). May, June.

Caltha L.

C. palustris L. MARSH MARIGOLD.

Frequent in swampy and muddy places, Piedmont, and southward on the Coastal Plain to northern Kent (Del.) County. Mid-April to mid-May.

Aquilegia L. COLUMBINE.

A. canadensis L.

Frequent on rocky hillsides of the Piedmont; locally abundant on the Coastal Plain: woods, Middle Neck (Ce), *R. R. Tatnall*,

Aquilegia RANUNCULACEAE—MAGNOLIACEAE *Magnolia*
1363, 7 May 1932 (T); shaded gravelly road-bank 1 mi. s. of Chop-
tank Mills (K), *R. R. Tatnall*, 2160, 3 June 1934 (T, P), and 3263,
29 May 1937 (T, G); bank of Wicomico River, 2 mi. s. w. of Salis-
bury (Wi), (*A. V. Smith*), *R. R. Tatnall*, 4367, 11 Aug. 1939 (T);
3½ mi. w. n. w. of Longwoods (Ta), *Earle*, 3763, 6 Sept. 1942 (A).

Delphinium L. LARKSPUR.

D. Ajacis L.

A frequent escape from gardens to waste ground. July. Nat.
from Europe.

Cimicifuga L. BUGBANE.

C. racemosa (L.) Nutt. BLACK SNAKEROOT.

Common in rocky woods of the Piedmont; rare on the Coastal
Plain: Middle Neck (Ce), *Long*, 37290, 7 May 1932 (A); 4 mi. n. e.
of Trappe (Ta), *Earle*, 2737, 5 July 1940 (P). Late June, July.

Actaea (L.) Mill.

A. alba (L.) Mill. WHITE BANEERRY.

Rare, in rocky woods along Brandywine Creek (NC): Wills
Rock, Wilmington, *Commons* in 1866 and 1893 (A); same, *Canby*,
13 May 1899 (D); Rockford woods, *E. Tatnall*, 14 May 1897 (D);
Wills Rock, along the railroad, *R. R. Tatnall*, 5085, 13 May 1944
(T). Mid-May, early June.

Hydrastis Ellis.

H. canadensis L. ORANGE-ROOT. GOLDEN SEAL.

Rare, on rocky hillsides of the Piedmont: woods along Brandy-
wine Creek, above Rockland (NC), *Commons*, 29 June 1893 (A);
woods above Rowlandsville (Ce), *Long & Bartram*, 1175, 31 May
1913 (A); Ashland (NC), *R. R. Tatnall*, 1857, 17 June 1933 (T, G).
Late April, early May.

MAGNOLIACEAE (MAGNOLIA FAMILY)

Magnolia L.

✓ H **M. virginiana L. SWAMP MAGNOLIA. SWEET BAY.**

Common in swampy thickets, from the Fall Line southward to
Worcester County; seldom near the coast. Late May to early
July.

Liriodendron L.

L. Tulipifera L. TULIP TREE.

Common in rich soil of the northern half of our area. A single tree reported from Accomac County: 1 mi. n. e. of Silva, A. V. Smith in 1943. Late May, early June.

ANONACEAE (CUSTARD APPLE FAMILY)

Asimina Adans.

A. triloba Dunal. PAPAWE.

Along streams, in rich, usually wooded, soil; common in the Piedmont area; frequent southward to the Virginia line, chiefly inland. Late April, May.

MENISPERMACEAE (MOONSEED FAMILY)

Menispermum L.

M. canadense L. MOONSEED.

Frequent in shaded ground along streams, and on rocky hillsides, Piedmont and Coastal Plain. June.

BERBERIDACEAE (BARBERRY FAMILY)

Podophyllum L.

P. peltatum L. MAY APPLE.

Common in woods of the Piedmont; infrequent southward to Sussex and Talbot Counties; rare farther south: thicket $\frac{1}{2}$ mi. w. of Greenbackville (Wo), A. V. Smith & R. R. Tatnall, 4433, 27 April 1940 (T); thicket $1\frac{1}{4}$ mi. e. of Wattsville (Ac), R. R. Tatnall, 4436, 28 April 1940 (T). May.

Caulophyllum Mx.

C. thalictroides (L.) Mx. BLUE COHOSH.

Common in rocky woods of the Piedmont province. May.

Berberis L. BARBERRY.

B. Thunbergii DC.

Cultivated, and occasionally spontaneous in northern New Castle County. Introd. from Japan.

B. vulgaris L.

Occasionally spontaneous: Richardson's Mill, 1 mi. w. of Wil-

Berberis

LAURACEAE—PAPAVERACEAE

Bocconia

mington, *Commons* in 1867 (A), and *E. Tatnall* in 1874 (D).
Nat. from Europe.

LAURACEAE (SASSAFRAS FAMILY)

Persea Gaert. f. RED BAY.

P. Borbonia (L.) Spreng. forma *pubescens* (Pursh) Fern. (*P. palustris* (Raf.) Sarg. See Fernald: *Rhodora* 47, 149–151. 1945.)

Frequent in Northampton County; rare farther north: Cypress Swamp, w. of Selbyville (S), where it reaches its northern limit, *Nuttall*, in 1809 (A), and *W. S. Taber*, Dec. 1941 (T). Early June.

Sassafras Nees.

✓ H **S. albidum** (Nutt.) Nees. (*S. variifolium* (Salisb.) Ktze.) SASSAFRAS.

Common throughout, in rich woods or sandy soil. April.

Var. *molle* (Raf.) Fern. *Sassafras*

Found chiefly in the northern portion; less common than the species.

Lindera Thunb. SPICE BUSH.

L. Benzoin (L.) Blume. (*Benzoin aestivale* (L.) Nees.)

Common in rich woods and in open sandy soil, Piedmont and Coastal Plain. April.

PAPAVERACEAE (POPPY FAMILY)

Sanguinaria L.

S. canadensis L. BLOODROOT.

Common in rich woods of the Piedmont; infrequent to rare on the Coastal Plain: woods $\frac{1}{2}$ mi. w. of Greenbackville (Ac), *A. V. Smith & R. R. Tatnall*, 4341, 9 Aug. 1939 (T); thicket $1\frac{1}{4}$ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4435, 28 April 1940, (T); woods 4 mi. n. n. e. of Trappe (Ta), *Earle*, 3254, 17 May 1941 (A). April.

Bocconia Plum. ex L.

B. cordata Willd. PLUME POPPY.

Occasionally escaping from gardens, and persisting. July. Introd. from China.

Chelidonium L.

C. majus L. CELANDINE.

Common in damp woods and waste ground, northern New Castle and Cecil Counties. April, May. Nat. from Europe.

Glaucium Hill.

G. flavum Crantz. HORN POPPY.

Rare, in waste ground: Greenbank (NC), *Commons*, 1 July 1880 (A). Adv. from Europe.

Papaver L. POPPY.

P. somniferum L. OPIUM POPPY.

Rare escape in waste places: Wilmington, *Commons*, 11 June 1897 (A).

P. dubium L.

Infrequent; fields and roadsides in New Castle County. May. Adv. from Europe.

Argemone L.

A. mexicana L. PRICKLY POPPY.

Occasional escape in waste ground. Aug., Sept. Adv. from Mexico.

FUMARIACEAE (FUMITORY FAMILY)

Adlumia Raf. CLIMBING FUMITORY.

A. fungosa (Ait.) Greene. (A. cirrhosa Raf.)

Infrequent; rocky banks of the Brandywine Creek (NC). June.

Dicentra Bernh.

D. Cucullaria (L.) Bernh. DUTCHMAN'S BREECHES.

Frequent in rich, rocky woods, Piedmont province. April, early May.

Corydalis Medic.

C. flavula (Raf.) DC.

Locally abundant in rocky woods along the Susquehanna River; rare in northeastern New Castle County: moist woods along Naamans Creek, below Harvey (Arden) Station, *Commons & Tatnall*, 27 April 1894 (A). April, May.

Fumaria L.

F. officinalis L. FUMITORY.

An infrequent escape to cultivated ground. June. Adv. from Europe.

CRUCIFERAE (MUSTARD FAMILY)

Draba L.

D. verna L. WHITLOW GRASS.

A common weed in waste and cultivated ground. Late March, April. Nat. from Europe.

Thlaspi L.

T. arvense L. PENNY CRESS.

Infrequent; in fields and about mushroom houses. Late April, early May. Nat. from Europe.

Lepidium L. PEPPERGRASS.

L. virginicum L. WILD PEPPERGRASS.

Common weed of fields and roadsides. May to November.

L. densiflorum Schrad. (*L. apetalum* Willd.)

Rare weed in dry ground: "Old fields and wastes" (NC), *E. Tatnall*, 2 June 1897 (D). Native of Eurasia.

L. ruderale L. NARROW-LEAVED PEPPERGRASS.

An infrequent weed on city streets and wharves. Nat. from Europe.

L. sativum L. GARDEN CRESS.

A rare escape to streets and waste places: Wilmington, *Commons*, 6 July 1898 (A). Introd. from Europe.

4 ✓ **L. campestre (L.) R. Br.** FIELD CRESS.

Common weed of fields and roadsides in the northern half of our area. May, June. Nat. from Europe. *Sussex*

, **Teesdalia R. Br.****T. nudicaulis R. Br.**

A single known station: sand of the upper beach of Chesapeake Bay, w. of Kiptopeke (No), *R. R. Tatnall*, 3777, 21 May 1938 (T, G, A, P). April, May. Adv. from Europe.

Coronopus Ludwig.**C. didymus (L.) Sm. WART CRESS.**

A waif from Europe, rare, but apparently spreading: wharves, Wilmington, *Commons & Tatnall*, in 1897 (D, A); edge of salt marsh, Wachapreague (Ac), *Fernald & Long*, 3946, 26 July 1934 (P, G); in lawn grass, Kiptopeke (No), *R. R. Tatnall*, 3773, 21 May 1938 (T, A); sidewalk, north side of Ninth St., just west of Washington St., Wilmington, *R. R. Tatnall*, 5273, 14 June 1946 (T, A).

Capsella Medic.**C. Bursa-pastoris (L.) Medic. SHEPHERD'S PURSE.**

Common weed in cultivated ground, throughout. April, May. Nat. from Europe.

Var. bifida Crépin.

Rare weed in cultivated ground: Eastville (No), *Fernald & Long*, 5308; potato field $2\frac{1}{2}$ mi. s. of Wattsville (Ac), *R. R. Tatnall*, 3793, 22 May 1938 (T, G, P).

Camelina Crantz. FALSE FLAX.**C. sativa (L.) Crantz.**

One collection: fields, Ashland (NC), *Commons*, 22 May 1876, (A). Nat. from Europe.

C. microcarpa Andrz.

Fields; infrequent in the Piedmont; occasional on the Coastal Plain: Sharptown (Wi), *Otis*, 3 June 1914 (D); 1 mi. n. e. of Snow Hill (Wo), *R. R. Tatnall*, 1162, 31 May 1931 (T, P); $\frac{1}{2}$ mi. s. w. of Hockessin (NC), *Long & Tatnall*, 1671, 22 April 1933 (A, T, G). May. Nat. from Europe.

Cakile Ludwig.**C. edentula (Bigel.) Hook. SEA ROCKET.**

Common on sands of the beach, from Cape Charles northward to Talbot and southeastern New Castle Counties. June to Nov.

Raphanus L. RADISH.**R. Raphanistrum L. WILD RADISH.**

Frequent weed in cultivated ground. June, July. Nat. from Europe.

R. sativus L. RADISH.

Fields and waste ground, escaping from cultivation. June. Introd. from Europe.

Brassica L. MUSTARD. TURNIP.

B. hirta Moench. (*B. alba* of manuals. See Wheeler: *Rhodora* 40, 306, 1938.) WHITE MUSTARD.

Occasionally spontaneous after cultivation. Introd. from Europe.

B. kaber (DC) Wheeler var. *pinnatifida* (Stokes) Wheeler. (*B. arvensis* of manuals. See the reference under *B. hirta*.)

Weed in fields and waste places. Nat. from Europe.

B. juncea (L.) Cosson. INDIAN MUSTARD.

Fields and waste ground, New Castle County. Nat. from Asia.

B. japonica Siebold. CURLED MUSTARD.

An escape in cultivated ground: Wilmington, *Commons*, 30 June 1896 (A). Introd. from Asia.

B. nigra (L.) Koch. BLACK MUSTARD.

Common on roadsides and in waste ground, New Castle County. Nat. from Europe.

B. campestris L. RUTABAGA.

An infrequent escape from cultivation. Introd. from Europe.

Diplotaxis DC.

D. tenuifolia (L.) DC.

Rare weed in cultivated soil: near Georgetown (S), *F. M. Jones*, 24 May 1931 (T); field 1 mi. n. e. of Snow Hill (Wo), *R. R. Tatnall*, 1161, 31 May 1931 (T). Late May. Adv. from Europe.

Conringia Link.

C. orientalis (L.) Dumort. HARE'S-EAR MUSTARD.

Infrequent in door-yards and waste places. June, July. Introd. from Europe.

Sisymbrium L. HEDGE MUSTARD.

S. officinale (L.) Scop. var. *leiocarpum* DC.

Infrequent in meadows and about dwellings. May, June. Nat. from Europe.

S. altissimum L. TUMBLE MUSTARD.

Rare weed on roadsides: along causeway south of Wilmington, *Commons*, 6 July 1898 (A, D); along Duncan's road, Marshallton (NC), *Otis*, 30 May 1916 (A). Nat. from Europe.

Arabidopsis (DC) Schur.

A. Thaliana (L.) Schur. (*Sisymbrium Thalianum* of Gray's Man., ed. 7.) MOUSE-EAR CRESS.

Frequent throughout, in fields, open woods and waste ground. Mid-April, May. Nat. from Europe.

Hesperis L. ROCKET.

H. matronalis L. DAME'S VIOLET.

Occasional escape from gardens to waste ground, New Castle County. Introd. from Europe.

Erysimum L.

E. cheiranthoides L. WORM-SEED MUSTARD.

Rare: bank of Brandywine Creek at Wilmington, *E. Tatnall* in 1841 (D); waste ground, Wilmington, *Commons*, 18 June 1897, (A).

E. repandum L.

One collection: Tarbutton Pond, n. e. of Trappe (Ta), *Earle*, 2401, 11 May 1940 (P). Adv. from Europe.

Nasturtium R. Br.

N. officinale R. Br. (*Sisymbrium Nasturtium-aquaticum* L.) WATER CRESS.

Frequent in ditches and slow streams. June. Nat. from Europe.

Rorippa Scop.

R. sylvestris (L.) Bess. (*Radicula sylvestris* (L.) Druce.)

Infrequent; fields, roadsides and meadows, New Castle and Cecil Counties. June, mid-July. Nat. from Europe.

R. islandica (Murray) Borbas var. microcarpa (Regel) Fernald. (*R. palustris* (L.) Moench. See *Rhodora* 42, 271-274. 1940.) MARSH CRESS.

Frequent in wet places in the northern half of the Peninsula. May into autumn.

Var. *hispida* (Desv.) Butters & Abbe. (*R. palustris* var. *hispida* (Desv.) Rydb.)

Similar situations; infrequent.

Armoracia Gaertn.

A. rusticana Gaertn. HORSE RADISH.

Escaped from cultivation, New Castle County. Introd. from Europe.

Barbarea R. Br. WINTER CRESS.

B. vulgaris R. Br. (Incl. *B. stricta* Andrz.) YELLOW ROCKET.

Damp ground, fields and roadsides; rather frequent in the Piedmont; less so on the Coastal Plain. Early May.

B. verna (Mill.) Asch.

Common throughout, in fields and on roadsides. April. Introd. from Europe.

Dentaria L. TOOTHWORT.

D. heterophylla Nutt.

Infrequent in rich woods of the Piedmont. Early April.

D. laciniata Muhl.

Common in rich woods of New Castle and Cecil Counties; rare southward: roadside thicket $1\frac{1}{4}$ mi. e. of Wattsville (Ac), A. V. Smith & R. R. Tatnall, 4437, 28 April 1940 (T). Late April.

Cardamine L. BITTER CRESS.

C. bulbosa (Schreb.) BSP. SPRING CRESS.

Common in wet meadows of the Piedmont; one known collection from the Coastal Plain: near Easton (Ta), Earle, 1411, 9 May 1937 (P). Late April, May.

C. Douglassii (Torr.) Britton. (*C. rhomboidea* var. *purpurea* Torr.)

Locally abundant in alluvial soil along the Susquehanna River: "Cecil Co., Md.," J. J. Carter, 28 April 1887 (A); $\frac{3}{4}$ mi. s. w. of Rowlandsville (Ce), R. R. Tatnall, 4478, 6 May 1940 (T, P, A, G). May.

C. rotundifolia Mx.

Infrequent in swampy places in the Piedmont area. May.

C. hirsuta L.

Rare: Piedmont and Coastal Plain: $\frac{1}{2}$ mi. n. w. of Octoraro Station (Ce), *L. F. A. Tanger*, 3029, 27 April 1939 (A); roadside $2\frac{1}{4}$ mi. s. of Milton (S), *R. R. Tatnall*, 4427, 27 April 1940 (T, P, G); thicket $1\frac{1}{4}$ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4440, 28 April 1940 (T). Late April, May.

C. parviflora L. var. **arenicola** (Britt.) O. E. Schulz. (See *Rhodora* 29, 192. 1927.)

Infrequent in rocky woods and sandy soil of New Castle and Cecil Counties. Late April to mid-June.

C. pennsylvanica Muhl.

Frequent in wet meadows of the Piedmont area; several collections in Talbot County, *Earle* (P). Late April to June.

C. Longii Fernald.

One collection: tidal shore of North East River, Charlestown (Ce), *Long*, 57097, 20 July 1941 (A).

Arabis L. ROCK CRESS.**A. lyrata** L.

Frequent on rocky and sandy soils, including serpentine, New Castle and Cecil Counties. Mid-April to June.

A. dentata T. & G.

Known only from two collections along the Susquehanna River at Bald Friar (Ce): *J. J. Carter*, 29 May 1907 (A); *Long & St. John*, 18 April 1913 (A).

A. glabra (L.) Bernh. See Hopkins: *Rhodora* 39, 108. 1937.

One collection: field near Concord Station, Wilmington, *Commons*, 31 June 1896 (A).

A. Drummondii Gray. See Hopkins, l. c. p. 139.

One collection: Concord Station, Wilmington, *Commons*, June 1897 (A).

A. laevigata (Muhl.) Poir.

Infrequent; rocky hills along Brandywine Creek (NC), and Susquehanna River (Ce); apparently local. Mid-April, May.

A. canadensis L. SICKLE-POD.

Frequent in rocky woods of the Piedmont. Late May, June.

CAPPARIDACEAE (CAPER FAMILY)

Polanisia Raf.

P. graveolens Raf.

Infrequent; shores of Chesapeake Bay and streams tributary thereto, in Cecil and Kent (Md.) Counties. July, August.

Cleome L.

C. spinosa L. (*C. pungens* Willd.) SPIDER FLOWER.

Cultivated, and occasionally escaping. Introd. from tropical America.

RESEDACEAE (MIGNONETTE FAMILY)

Reseda L. MIGNONETTE.

R. alba L.

Rare, in waste places: Centreville (NC), *Commons*, 22 July 1867 (A); Wilmington, *Commons*, 9 July 1898 (A, D). Adv. from Europe.

SARRACENIACEAE (PITCHER-PLANT FAMILY)

Sarracenia L.

S. purpurea L. var. *gibbosa* Wherry. PITCHER-PLANT.

Frequent in Sussex County, and occasional in Wicomico and Worcester Counties; rare in New Castle and Kent (Del.) Counties: Thompson's Swamp, 1½ mi. n. w. of New Castle (NC), *E. Tatnall*, May 1843 (D), *R. R. Tatnall*, 4 June 1886 (T); Tubmill Pond (K), 2 mi. n. of Milford, *Frank Morton Jones*. May to mid-June.

DROSERACEAE (SUNDEW FAMILY)

Drosera L. SUNDEW.

D. rotundifolia L.

Rare, in bogs, Piedmont and Coastal Plain: Centreville (NC), *Commons*, 18 Sept. 1868 (A); Thompson's Swamp (NC), 1½ mi. n. w. of New Castle, *R. R. Tatnall*, 28 July 1886 (T); Rehoboth (S), *Commons*, 15 July 1897 (A).

The Rehoboth citation is the last known collection on the Peninsula, and the species is probably no longer to be found in our area.

✓ *D. intermedia* Hayne. (*D. longifolia* of manuals.)

Frequent on the Coastal Plain, in New Castle, Sussex and Wicomico Counties. July.

[*D. filiformis* Raf.

Credited to "Del." in Gray's Manual, ed. 7; also by Fernald: *Rhodora* 33, 55, Map 29, in which the Cape Henlopen region is indicated; no specimens seen.]

PODOSTEMACEAE (RIVER WEED FAMILY)

Podostemum Mx.

P. ceratophyllum Mx. RIVER WEED.

On rocks in the Brandywine and Red Clay Creeks (NC); formerly rather frequent, but no longer to be found, having been exterminated by industrial waste in those streams: last collected at Greenbank (NC) by *R. R. Tatnall*, 24 Sept. 1886 (T). One collection from Wicomico County: *Shreve & Jones*, 1265, Aug. 1906 (U).

CRASSULACEAE (ORPINE FAMILY)

Penthorum L. DITCH STONECROP.

P. sedoides L.

Rather frequent in wet places, Piedmont and Coastal Plain. Mid-July to early Sept.

Tillaea L.

T. aquatica L. (*T. simplex* Nutt.)

Rare on muddy shores: Salisbury (Wi), *Bebb* in 1863 (A); and *I. S. Moyer*, 30 Aug. 1867 (A). Reported by *E. Tatnall* (MS Catalog), as having been collected by *Canby* in "Brandywine Creek above (Penna.) railroad bridge," Wilmington, in 1867, but no specimen seen.

Sedum L. STONECROP.

S. ternatum Mx.

Infrequent in alluvial soil along the Susquehanna River (Ce), and in rocky woods along the Brandywine and Red Clay Creeks (NC), Mid-April, May.

S. Telephium L.

Locally abundant in New Castle and Cecil Counties. Aug., Sept. Nat. from Europe.

SAXIFRAGACEAE (SAXIFRAGE FAMILY)

Saxifraga L. SAXIFRAGE.

S. pensylvanica L. SWAMP SAXIFRAGE.

Infrequent in wet places, New Castle County. May.

S. virginiensis Mx. EARLY SAXIFRAGE.

Common on dry, rocky hillsides of New Castle and Cecil Counties, apparently restricted to the Piedmont. Late March to early May.

Heuchera L.**H. americana** L. ALUM ROOT.

Frequent in woodlands, Piedmont area and southward on the Coastal Plain at least to Talbot County. May, early June.

Mitella L.**M. diphylla** L. MITREWORT.

Infrequent, in rich, rocky woods of the Piedmont; along Octo-raro Creek (Ce), and Brandywine, Red Clay and Mill Creeks (NC). Late April, early May.

Chrysosplenium L. GOLDEN SAXIFRAGE.**C. americanum** Schwein.

Common in cold, shaded rivulets in the Piedmont; less frequent southward on the Coastal Plain to Caroline and Talbot Counties. Early April, May.

Hydrangea L.**H. arborescens** L. WILD HYDRANGEA.

Rocky woods; frequent in western Cecil County; rare in New Castle County: Mt. Cuba, *J. Crawford*, 13 May 1892 (A). June, July.

Itea L.**I. virginica** L.

Frequent in swampy places throughout the Coastal Plain, except near the coast. Mid-May to mid-June.

Ribes L. CURRANT. GOOSEBERRY.**R. americanum** Mill. (*R. floridanum* L'Hér.) WILD BLACK CURRANT.

One known collection: Centreville (NC), *Commons* in 1866 (A). Reported by *E. Tatnall* (MS Catalog), from valleys of the Brandywine and Red Clay Creeks, but no confirming specimens seen.

HAMAMELIDACEAE (WITCH HAZEL FAMILY)

Hamamelis L. WITCH HAZEL.

H. virginiana L.

Rich woods; frequent in the Piedmont area; occasional on the Coastal Plain: $\frac{1}{2}$ mi. n. e. of Pepperbox (S), *R. R. Tatnall*, 3861, 18 June 1938 (T); $3\frac{1}{2}$ mi. s. e. of Salisbury (Wi), *R. R. Tatnall*, 3976, 8 Sept. 1938 (T); $1\frac{1}{2}$ mi. s. of the village of West (So), *R. R. Tatnall*, 4027, 9 Sept. 1938 (T). Fls. late Oct., Nov.; fruit maturing the following autumn.

Liquidambar L.

L. styraciflua L. SWEET GUM.

Common throughout. Late March to mid-May.

PLATANACEAE (PLANE TREE FAMILY)

Platanus L.

P. occidentalis L. BUTTONWOOD. SYCAMORE.

Frequent along streams of the Piedmont area; less common on the Coastal Plain. May.

ROSACEAE (ROSE FAMILY)

Physocarpus Maxim.

P. opulifolius (L.) Maxim. NINE-BARK.

Rare, on stream banks in the Piedmont: Greenbank (NC), *Commons*, 8 June 1882 (A); Leslie (Ce), *J. B. Brinton*, 28 June 1891 (P); "Along Brandywine Creek" (NC), *Canby*, 11 June 1896 (D); North East Creek (Ce), *Otis*, May 1913 (D). Late May, June.

Spiraea L.

S. alba duRoi. (*S. salicifolia* L. of Gray's Man., ed. 7.)

Rare; known only from swamps near Wilmington: *Commons*, in 1896 (A); *Canby* in 1899 (A). July, Aug.

S. latifolia Borkh. MEADOW SWEET.

Frequent in wet open ground near the Fall Line, in New Castle and Cecil Counties. Citations under *S. salicifolia* in *E. Tatnall*: (MS Catalog) are to be referred here. July, Aug.

S. tomentosa L. STEEPLE BUSH.

Common in low ground of the Coastal Plain, from the Fall Line to the Virginia boundary. Mid-July, Aug.

Exochorda Lindl.**E. racemosa** (Lindl.) Rehder. (*E. grandiflora* Hooker.)

A rare escape from cultivation: open place by highway, near the south end of Drawyers Creek bridge, at Old Drawyers Church, 1 mi. n. of Odessa (NC), *E. H. Walker*, 3304, 1 May 1942 (T). Introd. from China.

Gillenia Moench.**G. trifoliata** (L.) Moench. BOWMAN'S ROOT.

Infrequent, in the Piedmont province, preferring rich woodlands. Late May to mid-July.

Pyrus L. PEAR.**P. communis** L. COMMON PEAR.

"Near Mt. Cuba, naturalized along roads, etc." (NC), *Canby*, in 1897 (D). Introd. from Europe.

Malus Hill. APPLE.**M. angustifolia** Mx. (*Pyrus angustifolia* of Gray's Man., ed. 7.)
NARROW-LEAVED CRAB APPLE.

Infrequent on coastal sands, Sussex and Worcester Counties; rare elsewhere: thicket 1 mi. n. of Green Spring (NC), *Long*, 54895, 28 July 1940 (A); Messongo (Ac), *Ellis Mears* in 1883 (A). May.

M. coronaria (L.) Mill. (*Pyrus coronaria* L.) WILD CRAB APPLE.

Frequent in thickets and on river banks in the northern counties; infrequent on borders of salt marshes along the Atlantic coast, from Rehoboth (S) to Franklin City (Ac). May.

M. pumila Mill. (*Pyrus Malus* L.) APPLE.

Frequently growing unplanted in hedgerows. Introd. from Europe.

Aronia Pers. CHOKEBERRY.**A. arbutifolia** Ell. (*Pyrus arbutifolia* (L.) L. f.) RED CHOKEBERRY.

Common throughout, in swamps and wet thickets. May.

- A. prunifolia** (Marsh.) Rehder. (*Pyrus arbutifolia* var. *atropurpurea* (Britton) Robinson.) PURPLE-FRUITED CHOKEBERRY.

Infrequent in thickets and swampy woods, Piedmont and Coastal Plain.

- A. melanocarpa** (Mx.) Ell. (*Pyrus melanocarpa* (Mx.) Willd.) BLACK CHOKEBERRY.

Infrequent in moist woods, throughout. May.

Amelanchier Medic. SHAD BUSH. SERVICE BERRY.

- A. canadensis** (L.) Medic. (*A. oblongifolia* of Gray's Man., ed. 7. See Fernald: *Rhodora* 43, 559-567. 1941.)

Frequent in thickets and low ground of the Coastal Plain. Late April, early May.

An alder-like shrub.

- A. arborea** (Mx. f.) Fern.

Frequent in rocky woods of the Piedmont; less common in woods of the Coastal Plain, at least as far south as Sussex and Wicomico Counties. Late April, May.

Tree to 40 feet in height.

- A. laevis** Wiegand.

Infrequent; thickets and stream banks, New Castle and Cecil Counties. Late April, May.

Shrub or small tree to 35 feet.

- A. stolonifera** Wiegand.

Rare with us: "Queen Anne's County," *E. G. Vanatta*, 17 April 1908 (A).

Colonial and stoloniferous shrub to 5 feet, with erect and short racemes; usually upland.

- A. obovalis** (Mx.) Ashe. (See Fernald, l. c.)

Infrequent, or seldom collected, in thickets of the Coastal Plain: along Barlow Branch, 1 mi. s. of Townsend (NC), *R. R. Tatnall*, 3252, 20 April 1937 (T); along Plum Creek, 4 mi. s. w. of Elkton (Ce), *Long*, 54322, 19 May 1940 (A); 4 mi. n. w. of Easton (Ta), *Earle*, 3518, 25 April 1942 (P). Mid-April, May.

Low and stoloniferous; Coastal Plain form of *A. stolonifera*.

Crataegus L. HAWTHORN.

This is generally regarded as the most difficult genus of flowering plants of eastern United States, from the standpoint of classification, so that botanists have very generally neglected it. The following treatment is chiefly based on C. S. Sargent's study of "The Genus *Crataegus* in New Castle County, Delaware," the field work for which was done by William M. Canby in the years 1900-1903. Relatively few collections of *Crataegus* have been made in other parts of our area. The writer has had the assistance of Ernest J. Palmer, of the Arnold Arboretum, in the attempt to bring the nomenclature of our species up to date.

C. Crus-galli L. COCKSPUR THORN.

Common in the northern part of our area; some collections have been made in the southern part: Ocean City (Wo), *Canby*, July 1891 (D); Chincoteague Island (Ac), *R. R. Tatnall*, 3792, 22 May 1938 (T).

Var. pyracanthifolia Ait.

Rather frequent in northern New Castle County.

Var. oblongata Sarg.

Infrequent; meadows in northern New Castle County.

Var. capillata Sarg.

Rare: roadside 1 mi. e. of Christiana, on the road to New Castle, *Canby*, 1 June & 26 Oct. 1901 (D), and 23 May 1903 (A).

C. Canbyi Sarg. (Incl. C. Pennypackeri Sarg.)

Frequent in northern New Castle and Cecil Counties.

The TYPE tree is, or was, "between Newport and Stanton" (NC), *Canby*, 16 May & 16 Sept. 1899 (D).

C. disperma Ashe. (C. pausiaca Ashe.) MARSHALL'S THORN.

Rare: "meadows" (NC), *Canby*, 10 Oct. 1902 (A).

C. punctata Jacq.

Infrequent; along streams in northern New Castle County.

C. viridis L.

Rather frequent, but seldom collected; in bottomlands of streams, often growing in water: Choptank River, 1 mi. s. of Choptank Mills (K), *R. R. Tatnall*, 2157, 3 June 1934, and several later collections (T, A).

A tree, up to 30 or 40 feet high, ranging from Florida and Texas northward as far as our area.

C. pruinosa (Wendl.) K. Koch. (Incl. *C. delawarensis* Sarg., *C. arcana* Beadle, and *C. nemoralis* Sarg.)

One of the commonest Thorns of New Castle County, in both Piedmont and Coastal Plain areas.

C. pedicellata Sarg. (*C. arcuata* Ashe.)

"Frequent in woods and hedgerows," New Castle County, (*Canby*); collected near Wilmington, n. w. of New Castle, and e. of Newport.

C. macrosperma Ashe. (*C. tenella* Ashe.)

Common in New Castle County, in "meadows, banks and fields," (*Canby*); Rising Sun (Ce), J. J. Carter, 13 June 1905 (A), as *C. cordata*.

C. stolonifera Sarg. (*C. populnea* Ashe.)

"Frequent; rocky hills, wood borders and waste ground" in and about Wilmington (*Canby*).

C. Tatnalliana Sarg.

Rather frequent: "old hedges and waste places near Wilmington"; also near Newport, Farnhurst and New Castle (*Canby*).

Named in honor of Edward Tatnall. Regarded by some as a synonym of *C. pennsylvanica* Ashe, but this seems unlikely.

C. intricata Lange. (*C. apposita* Sarg. *C. straminea* Beadle.)

Numerous collections were made by *Canby*, from 1896 to 1900, in or near the valley of the Brandywine Creek, as *C. apposita*, (D, A); other collections are: Richardson's Mill, s. w. of Wilmington, Commons, 25 Aug. 1893, as *C. coccinea* var. *flabellata* (?); Easton Point (Ta), Earle, 3705, 2 Aug. 1942 (A), as *C. straminea*.

C. foetida Ashe. (*C. cuprea* Sarg.)

Rare: open lots in Wilmington, *Canby*, 1899 to 1902 (D, A); 1½ mi. s. w. of Ogletown, on the road to Wilson, R. R. Tatnall, 3299, 15 May 1937 (T).

C. phaenopyrum (L. f.) Medic. (*C. cordata* Ait. *C. populifolia* Walt.) WASHINGTON THORN.

Hedgerows and fields about Wilmington and near Carpenter

Station (NC), *Canby*, in 1893 to 1903 (D, A); 5 mi. n. of Pocomoke City (Wo), along highway 113, *R. R. Tatnall*, 1822, 29 May 1933 (T)

A southern species, naturalized northward to Pa. and N. J.

C. Oxyacantha L. ENGLISH HAWTHORN.

Cultivated, and sparingly escaped near Wilmington. Introd. from Europe.

C. monogyna Jacq. MAY THORN.

Occasionally escaping from cultivation: hedgerows 2 mi. n. of Wilmington, *Commons*, 29 May 1875 (A); near Wilmington, *Canby*, Sept. 1900 (A). Introd. from Europe.

Closely related to *C. Oxyacantha*, and often mistaken for it.

C. uniflora Muench. (*C. parvifolia* Ait. *C. tomentosa* of Gray's Man., ed. 7.) DWARF THORN.

Common in sandy soil of the Coastal Plain.

Fragaria L. STRAWBERRY.

F. virginiana Duchesne. COMMON WILD STRAWBERRY.

Common; moist woods, fields and roadsides. Late April, May.

F. vesca L. EUROPEAN WOOD STRAWBERRY.

Infrequent, in open ground, usually as an escape from cultivation. April, May.

F. grandiflora Ehrh. (*F. chilensis* Duchesne var. *ananassa* Bailey.)

One collection: sandy roadside along Elk River, Town Point (Ce), *M. J. Popowski*, 145, 30 May 1940 (A).

Duchesnea Sm.

D. indica (Andr.) Focke. MOCK-STRAWBERRY.

Frequent; roadsides and waste ground, Piedmont and Coastal Plain. May, June.

Potentilla L. CINQUEFOIL.

P. norvegica L. var. **hirsuta** (Mx.) Lehman. (*P. monspeliensis* L.)

Frequent in waste places and on roadsides, Piedmont and Coastal Plain. July.

P. argentea L. SILVERY CINQUEFOIL.

One collection: Sharptown (Wi), *Otis*, 19 May 1915 (D).

P. recta L.

Frequent; fields and roadsides, Piedmont, and Coastal Plain, southward at least to Worcester County. Late May, June. Nat. from Europe.

P. canadensis L. (*P. pumila* of authors. See *Rhodora* 33, 180-191. 1931.)

Infrequent, in dry soil, Piedmont, and southward on the Coastal Plain to Talbot and Sussex Counties. Late April, May.

P. simplex (Mx.) var. *calvescens* Fern. (*P. canadensis* of authors.)

Frequent in dry or moist sandy soil, Piedmont and Coastal Plain southward to Talbot County. June, July.

P. reptans L.

One collection: banks of White Clay Creek above Newark (NC), *Commons*, 2 June 1896 (A). Adv. from Europe.

Geum L. AVENS.

G. canadense Jacq. (*G. album* Gmel.)

Frequent in rich woods of the Piedmont; occasional on the Coastal Plain: near the Choptank River, n. w. of Trappe (Ta), Earle, 2759, 6 July 1940 (P). Late June, July.

G. virginianum L. (*G. flavum* (Porter) Bicknell.)

Infrequent throughout, in dry woods. Late June to Aug.

G. laciniatum Murray. (*G. virginianum* of authors. See *Rhodora* 37, 292. 1935.)

Infrequent; marshes and ditch banks, New Castle and Cecil Counties. Mid-May, June.

Rubus L. BLACKBERRIES AND RASPBERRIES.

R. occidentalis L. BLACK RASPBERRY.

Frequent in thickets and fencerows, especially northward. May.

R. phoenicolasius Maxim. WINEBERRY.

Frequently escaping to roadsides, and well established. Introd. from Japan.

R. odoratus L. PURPLE-FLOWERING RASPBERRY.

Infrequent, in rocky woods of the Piedmont area. June, July.

R. argutus Link. (Incl. *R. ostryifolius* Rydb.) Highbush Blackberry.

Infrequent (or seldom collected), in open ground: railroad bank, Southwood (NC), *R. R. Tatnall*, 908, 3 June 1930 (T); Ocean City (Wo), *Redmond*, 448, 8 June 1931 (US). Mid-May to mid-June.

R. frondosus Bigel. Bush Blackberry.

Frequent in woods, thickets and open ground, Piedmont, and Coastal Plain southward to Sussex County. Mid-May to mid-June.

R. laciniatus Willd. Cut-leaved Blackberry.

Escaping from cultivation, and frequently established in waste places, New Castle County. June.

R. procerus P. J. Muell. Himalaya-berry.

Escaping from cultivation. One collection: well established on roadside, Fredericktown (Ce), *Commons*, 13 June 1876 (A). Introd. from Europe.

R. cuneifolius Pursh. Sand Blackberry.

Frequent in sandy soil of the Coastal Plain, Sussex County and southward; one collection in upper Kent County (Del.): *Smyrna, Commons*, 9 June 1894 (A). Late May, June.

R. Enslenii Tratt. (*R. villosus* var. *humifusus* T. & G.) Dewberry.

Common in fields and on roadsides. Mid-May to mid-June.

✓ **R. flagellaris** Willd. (*R. procumbens* Muhl. *R. villosus* Bailey.) Dewberry.

Common in dry, open ground, Piedmont and Coastal Plain. Mid-May to mid-June. *Sussex Co*

R. hispidus L. Swamp Dewberry.

Common in swampy thickets and low ground in pine woods of the Coastal Plain. June to early July.

R. trivialis Mx.

Rare, in pine woods of southern Northampton County: *Fernald, Long & Fogg*, 5312, 14 Oct. 1935 (P, G).

Aphanes L.

A. arvensis Scop. (*Alchemilla arvensis* Scop.) PARSLEY PIERT.

One collection: sandy soil in a cypress swamp, s. w. of Millsboro (S), *Commons*, 23 May 1876 (A). Adv. from Europe.

Agrimonia L. AGRIMONY.

A. gryposepala Wallr.

One known collection: along Quarryville Creek, $\frac{3}{4}$ mi. s. e. of Bellevue (NC), *Canby*, 13 July 1896 (D).

A. pubescens Wallr. (*A. mollis* (T. & G.) Britton.)

Infrequent, in woods, Piedmont and Coastal Plain. Mid-July to mid-Sept.

A. platycarpa Wallr.

Rare, in pine woods, Northampton County: s. of Kendall Grove, *Fernald, Long & Fogg*, 5315, 13 Oct. 1935 (G, P); Eastville, *Fernald & Long*, 5314 (G).

A. parviflora Ait.

Common in fields, meadows and bottom lands, New Castle and Cecil Counties; rare farther south: near Easton (Ta), *Earle*, 1743, 3 Aug. 1938 (P), and 3013, 2 Sept. 1940 (P). Mid-July to mid-Sept.

A. rostellata Wallr.

Infrequent in rocky or sandy woods, Piedmont of New Castle County; rare on the Coastal Plain: $\frac{3}{4}$ mi. s. of Longwoods (Ta), *Earle*, 3468, 30 Aug. 1941 (P); $1\frac{3}{4}$ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4347, 10 Aug. 1939 (T). Aug., Sept.

Sanguisorba L. BURNET.

S. canadensis L. CANADA BURNET.

Infrequent, in bogs, Coastal Plain of New Castle County. Aug., Sept.

S. minor Scop.

One known collection: near Dagsboro (S), *Nuttall*, June 1809 (A). Adv. from Eurasia.

Rosa L. ROSE.

R. Eglanteria L. (*R. rubiginosa* L.) SWEETBRIER. EGLANTINE.'

An infrequent escape from gardens. Introd. from Europe.

R. gallica L.

A garden rose, occasionally escaping from cultivation. Introd. from Europe.

R. carolina L. (*R. humilis* Marsh.)

Frequent in swampy places, and in sandy pinelands, Piedmont and Coastal Plain. Late June, July.

R. virginiana L. (*R. lucida* Ehrh.)

Infrequent, in dry ground, chiefly Piedmont; rare on the Coastal Plain: dry sand, Rehoboth (S), *Commons*, 1 Aug. 1895 (A). Mid-June to mid-July.

R. palustris Marsh.

Frequent in swampy places on the Coastal Plain, north of the Virginia line. June, July.

Prunus L. PLUM. CHERRY.**P. serotina** Ehrh. WILD BLACK CHERRY.

Common throughout, in fencerows, woods and sands of the seashore. Mid-May to early June.

P. virginiana L. CHOKE CHERRY.

Rare: near Smyrna (NC or K), locality uncertain, *Commons*, 10 May 1894 (A). May, early June.

P. pensylvanica L. f. WILD RED CHERRY.

One known collection: near Chestertown (Ke), *E. G. Vanatta*, 4 Aug. 1904 (A).

P. insititia L. BULLACE PLUM.

Infrequent; hedgerows and open ground on the Coastal Plain of New Castle County. Adv. from Eurasia.

P. maritima Wang. BEACH PLUM.

Common on dunes and beaches of Sussex County. Fl. April; frt. Sept.

P. angustifolia Marsh. (*P. Chicasa* Mx.) CHICKASAW PLUM.

Rather frequent; Piedmont, and Coastal Plain north of the Virginia line. Early May.

A southern species, apparently near its northern limit in New Castle County.

P. Mahaleb L. MAHALEB CHERRY.

Escaping from cultivation; collected at several localities about Wilmington, chiefly on the banks of the Brandywine Creek, by *Canby* and by *E. Tatnall*, between 1896 and 1900 (D). Introd. from Europe.

P. Avium L. SWEET CHERRY.

Cultivated, and frequently escaping to hedgerows and margins of woods. Introd. from Eurasia.

P. Cerasus L. SOUR CHERRY.

Hedgerows and woods, escaping from cultivation in northern New Castle County. Introd. from Europe.

P. americana Marsh. WILD PLUM.

Frequent in thickets, meadows and pine woods, Piedmont and Coastal Plain, at least as far south as Sussex County. Fl. Mid-April, early May.

P. Padus L. EUROPEAN BIRD CHERRY.

Rare, in cultivation or escaped: Mount Cuba (NC), *A. McElwee*, 6 May 1893 (A); Hillcrest (suburb of Wilmington), in a lawn on Marsh Road, ca. 100 yards e. of Philadelphia Pike, (*D. Y. Liver-
side*), *R. R. Tatnall*, 5085, 5 May 1944 (T, A).

Amygdalus L.

A. Persica L. (*Prunus Persica* (L.) Stokes.) PEACH.

Frequently escaping from cultivation to roadsides and waste places. Fl. April. Introd. from Asia.

LEGUMINOSAE (PULSE FAMILY)

Gymnocladus Lam.

G. dioica (L.) Koch. KENTUCKY COFFEE TREE.

Planted, and occasionally spontaneous: roadside, Marshallton (NC), "self-grown seedling," *Otis*, in 1916 (A).

Gleditsia L.

G. triacanthos L. HONEY LOCUST.

Widely planted, and sometimes escaping.

Cassia L. SENNA.

C. hebecarpa Fern. (*C. marilandica* L. See Rhodora 39, 410-413. 1937.)

Common in the Piedmont; occasional farther south: ditch bank, Unionville (Ta), *Earle*, 3597, 22 June 1942 (A). July, Aug.

C. marilandica L. (*C. Medsgeri* Shafer.)

One collection: alluvial soil, Noxontown Pond, near Middletown (NC), *Commons*, 9 Oct. 1896 (A).

✓ **C. fasciculata** Mx. (*C. Chamaecrista* L. of manuals.) PARTRIDGE PEA.

Common in sandy soil, from the Fall Line southward to Accomac County. Late July to mid-Sept. *54546*

C. nictitans L. WILD SENSITIVE PLANT.

Common throughout; fields, roadsides and moist dune hollows. Late July to mid-Sept. *Hebecarpa*

Var. **hebecarpa** Fern. See Rhodora 38, 423. 1936.

Rare, in sandy soil: Oldtown Neck (No), *Fernald, Long & Fogg*, 5316 (P).

Cercis L.

C. canadensis L. JUDAS TREE. RED-BUD.

Common in rich, rocky woods of Cecil County; especially along the Susquehanna River and its tributaries; occasional in the Piedmont region of New Castle County: rich woods near Centreville (NC), *Commons* in 1865 and later (A, G); fields w. of Newark, *Canby* in 1892 (D); rare on the Coastal Plain: Middle Neck, woods along Great Bohemia Creek (Ce), *R. R. Tatnall*, 1064, 3 May 1931 (T), and *Long*, 37303, 7 May 1932 (A); along Sassafras River, Grove Point (Ce), *R. R. Tatnall*, 2442, 13 Oct. 1934 (T); along Kings Creek, n. e. of Easton (Ta), *Earle*, 1341, 24 April 1937 (P); 4½ mi. n. e. of Trappe (Ta), *Earle*, 2781, 5 July 1940 (P). April, mid-May.

Baptisia Vent. FALSE INDIGO.

B. tinctoria (L.) R. Br. WILD INDIGO.

Common throughout; fields, open woods and coastal dunes. June, July. *Susquehanna - 44546*

Var. *crebra* Fern. Rhodora 39, 414-415. 1937.

Rare: near Centreville (NC), *Commons*, 24 July 1883 (A); Elk Neck (Ce), *W. L. Abbott*, 18 June 1923 (A, G); $3\frac{1}{2}$ mi. n. of Accomac, *F. M. Jones*, 29 June 1928 (Missouri Bot. Gard.); woods w. of Wilmington, *Tidestrom*, 11514 (G); swampy woods s. of Kendall Grove (No), *Fernald, Long & Fogg*, 5318 (P).

B. alba (L.) R. Br.

Local, in Accomac County: open pine woods $3\frac{1}{2}$ mi. n. of Accomac, *F. M. Jones*, Aug. 1923 (P), *F. M. Jones & R. R. Tatnall*, 36, 31 May 1928, and several later numbers (T, G, P, A); *True*, 29 June 1928 (P); *H. N. Moldenke*, 19 May 1930 (P, US); pine woods 1 mi. s. of Accomac, *R. R. Tatnall*, 4209, 9 June 1939 (T).

The species here reaches its northern limit in the U. S. (See Larisey, "Monograph of the Genus *Baptisia*," Ann. Missouri Bot. Gard. 27, 167-169. 1940.) Fl. late May to mid-June.

× **B. pinetorum** Larisey (l. c. 189-190). (*B. tinctoria* var. *crebra* × *B. alba*.)

Local: open pine woods $3\frac{1}{2}$ mi. n. of Accomac, *F. M. Jones*, 29 June 1928 (TYPE, Herb. Missouri Bot. Gard.); *True*, 29 June 1928 (P); *Moldenke*, 1254, 19 May 1930 (P); *R. R. Tatnall*, 2656, 4 June 1935 (T, G). Late May to mid-June.

Crotalaria L.

C. sagittalis L. RATTLE BOX.

Frequent in sandy soil, throughout, except near the coast. Late June to late Aug.

Cytisus L.

✓ **C. scoparius (L.) Link. SCOTCH BROOM.**

Widely planted on the banks of Chesapeake & Delaware Canal, and escaping. Mid-May to mid-June. *Summer 1911*

Lupinus L.

L. perennis L. LUPINE.

Infrequent in sandy soil of the Coastal Plain, from Cecil and southern New Castle Counties southward to Wicomico County. May, mid-June.

Trifolium L. CLOVER.

T. arvense L. RABBIT-FOOT CLOVER.

Frequent in dry, sandy soil and moist dune hollows of the Coastal Plain. Mid-June, July. Nat. from Europe. *Succor. Co.*

T. incarnatum L. CRIMSON CLOVER.

Occasionally naturalized about fields, New Castle and Kent Counties, Del. Introd. from Europe.

T. pratense L. RED CLOVER.

Escaped from cultivation to fields and roadsides. June, July. Introd. from Europe. *Succor. Co.*

T. repens L. WHITE CLOVER.

Frequently escaping from cultivation, to fields and roadsides. Fl. all summer. Introd. from Europe.

T. hybridum L. ALSIKE CLOVER.

Rather frequent on roadsides and in fields, Cecil, New Castle and Sussex Counties. May to Sept. Introd. from Europe.

T. carolinianum Mx.

One collection: sandy soil, Milton (S), *Commons*, 17 Aug. 1899 (A).

T. agrarium L. HOP CLOVER. LARGE YELLOW CLOVER.

Frequent in the Piedmont region; rare on the Coastal Plain: Assateague Island (Ac), *True*, 28 June 1928 (P); pine woods, Savage Neck (No), *R. R. Tatnall*, 3380, 1 June 1937 (T). Fl. all summer. Nat. from Europe.

T. procumbens L. LOW HOP CLOVER.

Frequent in the Piedmont of New Castle County; rare southward to Talbot County: n. e. of Trappe (Ta), *Earle*, 2772, 5 July 1940 (P), and 3244, 17 May 1941 (A). Fl. all summer. Nat. from Europe.

T. dubium Sibth. (*T. procumbens* var. *minus* of Gray's Man., ed. 6.)

Infrequent, in sandy soil chiefly south of the Fall Line. Fl. all summer. Nat. from Europe.

Melilotus Hill. MELILOT.

M. officinalis (L.) Lam. YELLOW MELILOT.

Common on roadsides and waste ground of the Piedmont; one collection on the Coastal Plain: 4 mi. w. n. w. of Easton (Ta), Earle, 3383, 5 July 1941 (P). Fl. all summer. Nat. from Europe.

M. indica (L.) All.

Waste ground at Wilmington, *Commons & Tatnall*, 18 June 1897 (A, D). Adv. from Eurasia.

M. alba Desr. WHITE MELILOT.

Common in the Piedmont area of New Castle County; less frequent on the Coastal Plain, southward at least to Talbot and Sussex Counties. Fl. all summer. Nat. from Europe.

Medicago L. MEDICK.

M. sativa L. ALFALFA.

Frequently escaping from cultivation, and becoming established on roadsides. Introd. from Europe.

M. falcata L.

Occasional in streets of Wilmington, where collected by *Commons* in 1897 and 1898 (A); not seen since. Adv. from Europe.

M. lupulina L. BLACK MEDICK. *June 20 '71*

Frequent in grassy places in northern New Castle County; collected also in Cecil County, and in Talbot County (Earle). Adv. from Europe. *Sussex Co.*

Lotus L.

L. corniculatus L. BIRD'S-FOOT TREFOIL.

One collection: Cherry Island Marsh, Wilmington, *E. Tatnall* in 1886 (D). Adv. from Europe.

Psoralea L.

P. corylifolia L.

Waif, "East 7th Street extended," Wilmington, *Commons*, 30 Oct. 1897 (D). Native of India, probably introduced on ship's ballast.

Amorpha L.

A. fruticosa L. FALSE INDIGO.

Planted for hedges, and occasionally escaping. May, June. Introd. from Mexico.

Tephrosia Pers.**T. virginiana (L.) Pers. GOAT'S RUE.**

Frequent in dry soil, Piedmont area and southward on the Coastal Plain, at least to Wicomico County. June, early July.

T. spicata (Walt.) T. & G.

One collection: dry, sandy roadside, Georgetown (S), C. S. Williamson, 6 July 1908 (P).

Robinia L. LOCUST.**R. Pseudo-Acacia L. BLACK LOCUST.**

Common in northern New Castle County; less frequent southward, at least to Talbot County (*Earle*). May, June. *Sussex Co.*

R. hispida L. ROSE ACACIA.

An infrequent escape from cultivation, now well established in sandy soil, Sussex County. May.

R. Elliottii (Chapm.) Ashe.

Planted for ornament, and persisting for many years about Sharptown (Wi). May. Introduced from s. e. U. S.

Wisteria Nutt.**W. frutescens (L.) Poir. WISTERIA.**

An occasional escape from cultivation; native farther south, but apparently not in our area: roadside $4\frac{1}{2}$ mi. w. of Princess Anne (So), R. R. Tatnall, 1140, 30 May 1931 (T, P). May. *Sussex Co.*

Aeschynomene L.**A. virginica (L.) BSP.**

Formerly, but not recently, frequent on tidal shores of the Delaware River, from Holly Oak to Delaware City (NC); reported by A. V. Smith, in 1941, as abundant in border of the Manokin River, on the western outskirts of Princess Anne (So).

Arachis L.**A. hypogaea L. PEANUT.**

Spontaneous in waste ground at Wilmington (*Commons*, E. Tatnall), and at Sharptown (Wi), (*Otis*).

Scorpiurus L.

S. muricatus Willd.

A waif from the Mediterranean, collected on the south bank of Christiana Creek at Wilmington, probably on ships' ballast, by *Ziba Ferris*, June 1843 (D).

Desmodium Desv. TICK TREFOIL.**D. nudiflorum** (L.) DC.

Frequent in rocky woods of the Piedmont; infrequent in dry woods of the Coastal Plain, southward at least to Talbot County: $1\frac{3}{4}$ mi. s. s. e. of Easton (Ta), *Earle*, 3083, 4 Sept. 1940 (P). July to Sept.

D. acuminatum (Mx.) DC. (*D. grandiflorum* (Walt.) DC.)

Rare; rich or sandy woods: near Centreville (NC), *Commons*, 16 Sept. 1877 (A); Townsend (NC), *Canby*, 5 Oct. 1896 (D). July.

D. pauciflorum (Nutt.) DC.

Rare, in rocky woods of the Piedmont: Conowingo, *J. J. Carter*, 19 Aug. 1906 (A). July.

D. rotundifolium (Mx.) DC. (*Meibomia Michauxii* Vail.)

Infrequent in dry woods of northern New Castle County, and southward in sandy pine woods of the Coastal Plain to Wicomico County: near Sharptown (Wi), *Otis*, 19 Aug. 1915 (D). Late July to early Sept.

D. ochroleucum M. A. Curtis.

Rare, in woods of the Coastal Plain: Public Landing (Wo), *Canby*, Sept. 1873 (A); Felton (K), *Commons*, 1 Sept. 1882 (A); Cape Charles City (No), *Canby*, Aug. 1894 (D, A). Aug.

D. humifusum Beck. (*D. glabellum* (Mx.) DC.)

Rare, in sandy soil: edge of field 1 mi. n. of Salisbury (Wi), *Canby*, 10 Sept. 1865 (A); dry hills along Red Clay Creek (NC), *Canby*, Sept. 1894 (D).

D. canescens (L.) DC.

Frequent in thickets and borders of woods of the Piedmont area; infrequent southward on the Coastal Plain. Mid-July, Aug.

D. bracteosum (Mx.) DC.

Infrequent in rich, rocky woods of the Piedmont; one collection

from the Coastal Plain: Salisbury (Wi), *I. S. Moyer* in 1867 (U). Aug.

D. laevigatum (Nutt.) DC.

Infrequent, in sandy soil of the Coastal Plain; one collection from rocky woods of the Piedmont: along the Brandywine Creek, Wilmington, *Canby*, 20 Sept. 1899 (D). Aug. to early Sept.

D. viridiflorum (L.) Beck.

Infrequent, in dry woods, or occasionally in open ground, from the Fall Line southward to Wicomico County. Late July to early Sept.

D. Dillenii Darl.

Common in rocky woods of the Piedmont; less frequent southward to Talbot County. Aug., early Sept.

D. paniculatum (L.) DC.

Common in dry woods or open ground, apparently throughout the Peninsula, except along the coast. Late July to early Sept.

Var. **pubens** T. & G.

One collection: Ellendale (S), *C. S. Williamson*, 29 Aug. 1908 (A).

D. strictum (Pursh) DC.

Infrequent, in dry, sandy soil of the Coastal Plain, from Caroline County to Worcester County. Late July to early Sept.

D. canadense (L.) DC.

Rare, along streams and in marshy ground of the Piedmont: near Wilmington, *Tatnall & Commons*, 18 June 1897 (D, A); Conowingo (Ce), *E. B. Bartram*, 4 July 1907 (A). Mid-June to Aug.

D. sessilifolium (Torr.) T. & G.

Rare; known from one locality in Cecil County: Grove Point, open ground along the Sassafras River, *Long*, 45014, 13 Oct. 1934 (A); same place and date, *R. R. Tatnall*, 2437 (T, G). Aug.

D. rigidum (Ell.) DC.

Infrequent in dry soil of the Piedmont area; rare on the Coastal Plain: Salisbury (Wi), *Chickering*, 13 Aug. 1878 (U); thicket 1½

mi. w. of Ocean City (Wo), *R. R. Tatnall*, 1599, 4 Sept. 1932 (T). Aug., early Sept.

D. ciliare (Muhl.) DC. (*D. obtusum* of authors. See Fernald: *Rhodora* 40, 437. 1938.)

Infrequent, in dry sandy soil, from northern New Castle County to Cape Charles. Aug., early Sept.

D. marilandicum (L.) DC.

Frequent in dry, usually sandy, soil, Piedmont area, and southward to Wicomico and Worcester Counties. Aug., early Sept.

D. lineatum (Mx.) DC.

Rare, in dry pine woods of the Coastal Plain: Snow Hill (Wo), *Canby*, Sept. 1878 (D, U); Cape Charles City (No), *Canby*, Sept. 1894 (D); Eastville (No), *Fernald & Long*, 5330, 12 Oct. 1935 (P).

Lespedeza Mx. BUSH CLOVER.

L. procumbens Mx.

Frequent in dry, sandy soil, northern New Castle County and southward to northern Accomac County. Late July through Sept.

L. repens (L.) Bart.

Common in sandy thickets or open ground throughout our area. Late May to Sept.

L. violacea (L.) Pers.

Infrequent in dry woods, from northern New Castle County to Sussex and Talbot Counties. Aug., Sept.

L. Nuttallii Darl.

Rare, Caroline County: 4 mi. n. n. w. of Ridgely, *Earle*, 1575, 21 Aug. 1937 (P); road bank south of Greensboro, *Hans Wilkens*, 5358, 4 Sept. 1937 (P). Mid-Aug., Sept.

L. acuticarpa Mack. & Bush.

One collection: dry pine woods near Capeville (No), *Fernald, Long & Fogg*, 5333.

L. Stuevei Nutt. (For spelling of specific name see Nuttall: *Gen.* 2, 107 (1818)).

Infrequent in sandy pinelands, Sussex and Wicomico Counties. Aug.

L. virginica (L.) Britton.

Common in dry sand, Piedmont and Coastal Plain. Mid-Aug., early Sept.

L. intermedia (Wats.) Britton. (*L. frutescens* (L.) Brit. See Blake: *Rhodora* 26, 31, 1924.)

Infrequent, usually in sandy soil, Piedmont and Coastal Plain. Mid-Aug., early Sept.

✓ **L. cuneata** G. Don.

Three known stations in our area: roadside $\frac{1}{2}$ mi. n. of Longwoods (Ta), *Earle*, 3473, 30 Aug. 1941 (P); $1\frac{1}{2}$ mi. n. w. of Summit Bridge (NC), *F. M. Jones & R. R. Tatnall*, 4991, 24 Oct. 1941 (T, A); Sharptown (Wi), "tremendous masses in dry, sandy field," *Moldenke*, 13851, in *Castanea* 7, 124. 1942. Late Aug., Sept.

An Asiatic species, recently introduced as a field crop, and spreading. See Fernald: *Rhodora* 40, 437. 1938. *Handb.*

L. daurica (Laxm.) Schindler.

One collection: open pine woods, near cultivated ground, $\frac{3}{4}$ mi. n. of Pepperbox (S), *Long & Tatnall*, 3419, 15 June 1937 (T, G).

A single immature specimen was found, determined as above by M. L. Fernald. Probably introduced with grass or other seed, from eastern Asia.

L. hirta (L.) Hornem.

Infrequent in rich woods of the Piedmont province, and in sandy soil of the Coastal Plain southward to Wicomico County. Mid-Aug., early Sept.

✓ **L. capitata** Mx.

Infrequently in dry soil of the Piedmont area of New Castle County; more common southward to Accomac County, especially in coastal sand of the Atlantic Ocean. Mid-Aug., Sept. *Handb.*

L. angustifolia (Pursh) Ell.

Frequent in sandy pinelands, thickets and meadows, Sussex County; one station in southern New Castle County: near Collins Beach, *Commons*, Aug. 1867 (A). Aug., early Sept.

L. stipulacea Maxim.

Rare: roadside 3 mi. n. of Easton (Ta), *Earle*, 3488, 1 Sept. 1941

(P); field, Willards (Wi), *Moldenke*, 13847; abundant along highway at Greenwood (S), *Moldenke*, 13813.

Introduced from Korea as a forage crop, and spreading. See *Moldenke: Castanea* 7, 123-124. 1942.

***L. striata* (Thunb.) H. & A.**

Common in open sandy soil, practically throughout our area. Aug., early Sept. Nat. from eastern Asia.

***Stylosanthes* Sw. PENCIL FLOWER.**

***S. biflora* (L.) BSP. (*S. elatior* Sw.)**

Frequent throughout, in rocky soil of the Piedmont, and dry sand of the Coastal Plain. Mid-June to mid-Sept.

Var. ***hispidissima* (Mx.) Pollard & Ball.**

Rare, in sandy pinewoods: Laurel (S), *Commons*, 19 Aug. 1880 (A); 3½ mi. w. n. w. of Newark (Wo), *R. R. Tatnall*, 3042, 20 July 1936 (T, A, G).

***S. riparia* Kearney.**

Frequent in sandy soil of the Coastal Plain, Somerset County and northward to southern New Castle County; rare in the Piedmont area: Stone Run (Ce), *J. J. Carter*, 5 Aug. 1907 (A). Mid-June, July.

***Vicia* L. VETCH.**

***V. sativa* L.**

Cultivated for forage, and occasionally spreading to waste ground. May, June. Introd. from Europe.

***V. angustifolia* (L.) Reich.**

Infrequent throughout, in dry sandy soil. May, June. Nat. from Europe.

***V. tetrasperma* (L.) Moench.**

Rare in New Castle County: along the railroad, Bellevue, *Canby*, 23 June 1896 (D); railroad bank, Gordon Heights, *Commons*, 2 June 1897 (A); near Wilmington, *Canby*, 23 June 1897 (D). June, July. Nat. from Europe.

***V. hirsuta* (L.) S. F. Gray.**

Rare: along Brandywine Creek, Wilmington, *Benjamin Hoopes*, 10 May 1842 (D); Delaware City (NC), *Commons*, 1 May 1896 (A);

Millsboro (S), *G. L. Ellis*, 19 June 1935 (UD). May to Sept.
Nat. from Europe.

V. Cracca L.

Rare, in sandy soil: field 2 mi. n. of Georgetown (S), *Fogg*, 1714, 16 June 1926 (P, A); roadside ditch, Oak Hall (Ac), *H. N. Moldenke*, 19 May 1930 (P).

V. caroliniana Walt.

Infrequent; banks of streams in or near the Piedmont area.
May.

V. villosa Roth. HAIRY VETCH.

One collection: near Ogletown (NC), *Otis*, 4 July 1919 (D).
Intro. from Eurasia.

V. dasycarpa Tenore.

One collection: roadside 2 mi. s. of Georgetown (S), *Fogg*, 1714, 16 June 1926 (A).

V. grandiflora Scop.

Rare; roadsides and borders of fields: at Hudson Pond, 5 mi. s. of Milford (S), *R. R. Tatnall*, 262, 11 May 1929 (T); edge of field along DuPont Highway, w. of Georgetown (S), *R. R. Tatnall*, 1386, 29 May 1932 (T, A); roadside, Angola (S), *R. R. Tatnall*, 2886, 9 May 1936 (T, P, G); roadside, Savage Neck (No), *R. R. Tatnall*, 3381, 1 June 1937 (T, G). May, early June.

Of recent introduction from Europe; apparently spreading.

Lathyrus L.

L. palustris L. var. **myrtifolius** (Muhl.) Gray.

One collection: west of Milton (S), *C. S. Williamson*, 6 July 1908 (A).

L. latifolius L. EVERLASTING PEA.

Waste places, escaped from cultivation. Intro. from Europe.

Apios Ludwig. WILD BEAN.

A. americana Medic. (*A. tuberosa* Moench.)

Common in wet thickets, Piedmont and Coastal Plain, southward at least to Worcester County. Mid-July, Aug.

Phaseolus L. KIDNEY BEAN.

P. polystachios (L.) BSP. See *Rhodora* 44, 419. 1942.

Infrequent in thickets, New Castle County, in both Piedmont and Coastal Plain. July, Aug.

Vigna Savi. COW PEA.

V. sinensis (L.) Endl.

Rare escape from cultivation: near Milford (S), *Commons*, 12 Aug. 1897 (A); Franklin City (Ac), *S. Brown*, 22 Sept. 1907 (A). Introd. from Asia.

Strophostyles Ell.

✓ **S. helvola** (L.) Britton.

Frequent; stream banks, marshes and coastal sands, throughout. Aug. *Sussex Co.*

S. umbellata (Muhl.) Britton.

Infrequent, on serpentine soil, New Castle and Cecil Counties; frequent on dry, sandy soil, coastal dunes and borders of brackish marshes, southward to northern Accomac County. Aug., early Sept.

Clitoria L. BUTTERFLY PEA.

C. mariana L.

Frequent on dry, sandy soil of the Coastal Plain; rare on rocky hillsides of the Piedmont: bank of Brandywine Creek at Bancroft's dam, *R. R. Tatnall*, 22 July 1886, and later collections (T, G, A).

Glycine L.

G. Soja Sieb. & Zucc. SOYA BEAN.

Escaping from cultivation, to roadsides and fields. Introd. from Asia.

Centrosema Benth. SPURRED BUTTERFLY PEA.

C. virginianum (L.) Benth.

Infrequent, in dry, sandy soil of the Coastal Plain, from northern Accomac County northward to Talbot and Queen Anne's Counties. July to mid-Sept.

Amphicarpa Ell. HOG PEANUT.

A. bracteata (L.) Fern. (*A. monoica* (L.) Ell. See *Rhodora* 35, 276. 1933.)

Common in rich woods of the Piedmont; rarely or seldom collected on the Coastal Plain: two stations near Easton (Ta), *Earle*, 3088 and 3121, both in 1940 (P); one station in Wicomico County: 3 mi. n. e. of Whitehaven, *A. V. Smith & R. R. Tatnall*, 3985, 8 Sept. 1938 (T). Aug., early Sept.

Var. *comosa* (L.) Fern. (*A. Pitcheri* T. & G. See *Rhodora* 39, 318. 1937.)

Infrequent in the Piedmont of New Castle County; rare on the Coastal Plain: 1½ mi. s. of Bohemia Mills (Ce), *R. R. Tatnall*, 2093, 30 Sept. 1933, and 2813, 15 Sept. 1935 (T, P, A, G); 2 mi. s. s. e. of Longwoods (Ta), *Earle*, 3491, 1 Sept. 1941 (P). Mid-July to mid-Sept.

Galactia P. Br. MILK PEA.

✓ **G. regularis** (L.) BSP. (*G. glabella* Mx.)

Frequent in dry, sandy pinelands, Sussex, Wicomico and Worcester Counties; one doubtful collection in New Castle County: "Brandywine," *I. C. Martindale* in 1867. July, mid-Aug.

G. volubilis (L.) Britton.

Rare in the Piedmont of New Castle County: dry, wooded hillsides along Brandywine Creek, *Commons* in 1874 (A); infrequent in dry sand of the Coastal Plain: Salisbury (Wi), *Canby*, 21 July 1893 (D); Georgetown (S), *C. S. Williamson*, 5 July 1908 (A).

Pueraria DC.

P. Thunbergiana (S. & Z.) Benth. KUDZU VINE.

Escaping from cultivation, and running and climbing over wide areas: Bancroft's Banks, Wilmington; Rehoboth (S), etc.

Rhynchosia Lour.

R. tomentosa (L.) Hook. & Arn. (*R. erecta* (Walt.) DC. See *Rhodora* 44, 421-425, 1942.)

Infrequent in dry, sandy woods, Coastal Plain, from Eastville (No) to Kent (Del.) and Caroline Counties. Aug.

LINACEAE (FLAX FAMILY)

Linum L. FLAX.

L. usitatissimum L. COMMON FLAX.

Cultivated, and sometimes escaping to roadsides. Introd. from Europe.

L. striatum Walt.

Frequent in bogs, meadows and wet woods of the Coastal Plain, northward from Worcester County; rare in the Piedmont: Rock Springs (Ce), *J. J. Carter*, 11 July 1908 (A). Late June to mid-Aug.

L. virginianum L.

Frequent in dry, usually sandy, ground, Coastal Plain. Mid-June to early Aug.

✓ **L. medium** (Planch.) Britton.

Common in dry sandy soil, Piedmont, and Coastal Plain southward to northern Accomac County. Late June to Aug. *Savanna*

L. intercursum Bicknell.

Infrequent; New Castle and Cecil Counties, in dry soil. Late June to mid-Aug.

L. floridanum (Trel.) Planch.

Known only from coastal sands of northern Accomac County: Chincoteague and Assateague Islands, *True*, June 1928 (P).

OXALIDACEAE (WOOD SORREL FAMILY)

Oxalis L. WOOD SORREL.

O. violacea L. VIOLET WOOD SORREL.

Frequent in rich woods of the Piedmont; infrequent on the Coastal Plain southward to Talbot County (*Earle*). May to early July.

fl **O. stricta** L. YELLOW WOOD SORREL.

Frequent on the Coastal Plain, from the Fall Line southward to Sussex and Dorchester Counties; occasional farther south: Kiptopeke (No), *R. R. Tatnall*, 1793, 28 May 1933 (T); Savage Neck (No), *Fernald & Long*, 5341, 11 Oct. 1935 (forma *viridiflora* (Hus) Fern. (G, T, P, U). Early May through the summer. *Henricus*

O. florida Salisb. (*O. filipes* Small.) SLENDER YELLOW WOOD SORREL.

Infrequent; Coastal Plain southward to Worcester County. Early May to July.

O. europaea Jord. (*Xanthoxalis cymosa* Small.)

Infrequent, Piedmont and Coastal Plain, in Cecil, Kent (Del.) and Talbot Counties (*Earle*). Late May, through the summer. *Henricus*

O. corniculata L. (*O. repens* Thunb.)

Infrequent, from northern New Castle County, southward to Kent (Del.) and Talbot Counties (*Earle*). Mid-May through the summer.

GERANIACEAE (GERANIUM FAMILY)**Geranium** L. CRANESBILL.**G. maculatum** L. WILD CRANESBILL.

Common in woods and fields, in both provinces of the two northern counties; rare or neglected farther south: 4 mi. n. e. of Trappe (Ta), *Earle*, 2753, 5 July 1940 (P). Late April to early June.

G. Robertianum L. HERB ROBERT.

Rare, in woods bordering estuaries of Chesapeake Bay: Bivalve (Do), *J. J. Carter*, 12 June 1906 (A); Miles River, 3½ mi. w. n. w. of Easton (Ta), *Earle*, 3762, 6 Sept. 1942 (A, P).

G. carolinianum L.

Common; woods, fields and rocky banks, Piedmont, and southward on the Coastal Plain to Sussex and Dorchester Counties. May, early June.

G. pusillum Burm. f.

Waste ground and tidal shores about Wilmington; not collected since 1866. Adv. from Europe.

G. molle L.

One known collection: at bridge 1 mi. e. of Willards (Wi), *Earle*, 2007, 1 May 1939 (Herb. *Earle*). Adv. from Europe.

G. columbinum L. LONG-STALKED CRANESBILL.

Infrequent; Piedmont of Cecil County, and southward to northern Sussex County. Late May, June. Nat. from Europe.

G. dissectum L.

Rare, in waste or cultivated ground in the southern part of the Peninsula: streets of Accomac village (Ac), *R. R. Tatnall*, 334, 1 June 1929 (T, G); fields 2 mi. s. of Princess Anne (So), *R. R. Tatnall*, 1145, 31 May 1931 (T). Adv. from Europe.

Erodium GERANIACEAE—POLYGALACEAE *Polygala*

Erodium L'Hér. STORKSBILL.

E. cicutarium (L.) L'Hér.

Frequent, chiefly in cultivated ground, from the Fall Line southward to Accomac County. Late March, April. Nat. from Europe.

RUTACEAE (RUE FAMILY)

Zanthoxylum L. PRICKLY ASH.

Z. americanum Mill. NORTHERN PRICKLY ASH.

One collection: rocky wooded slope n. of Rockland (NC), Long, 32297, 14 May 1925 (A).

Z. Clava-Herculis L. SOUTHERN PRICKLY ASH. "TOOTHACHE TREE."

Infrequent in Accomac and Northampton Counties, near the shore. Fl. late May, June.

Ptelea L.

P. trifoliata L. SHRUBBY TREFOIL.

An occasional escape in waste ground about Wilmington.

SIMARUBACEAE (QUASSIA FAMILY)

Ailanthus Desf. TREE-OF-HEAVEN.

A. altissima Swingle. (*A. glandulosa* Desf.)

Common about Wilmington, and elsewhere; usually spontaneous. Introd. from Asia.

MELIACEAE (MAHOGANY FAMILY)

Melia L.

M. Azedarach L. CHINA-BERRY TREE. PRIDE-OF-INDIA.

Cultivated, and sometimes spontaneous in Northampton County: edge of pine woods n. of Kendall Grove, Fernald, Long & Fogg, 5357 (P). Nat. from the Himalayas.

POLYGALACEAE (MILKWORT FAMILY)

Polygala L. MILKWORT.

P. paucifolia Willd. FRINGED POLYGALA.

Very rare, in the Piedmont of New Castle County; known from a single station: $\frac{1}{4}$ mi. n. of Mt. Cuba Station, on railroad bank,

where first discovered by *William Tatnall, Jr.*, in May 1890 (D); many later collections (A, P, T, U). Early May.

P. Senega L. SENECA SNAKEROOT.

Formerly rather frequent in rocky woods of the Piedmont; now rare or perhaps extinct in our range: wooded slope just s. of Guyencourt Station (NC), *Long*, 27524, 23 June 1923 (A); and *Mary H. Williams*, 1 June 1924 (A).

P. incarnata L.

Rare in the Piedmont area: Milltown (NC), *Commons* in 1863, (A); frequent in sandy soil of the Coastal Plain, especially in dry pine woods. Late June to mid-Oct.

P. sanguinea L. (*P. viridescens* L.)

Common in wet places, Piedmont, and southward on the Coastal Plain to Wicomico County. Mid-June to mid-Oct.

P. mariana Mill.

Common in dry woods and fields, and also in wet meadows, Coastal Plain, from the Fall Line southward to southern Accomac County. Late June to mid-Oct.

P. Nuttallii T. & G.

Frequent in open, sandy soil, from just above the Fall Line to Worcester and Somerset Counties. Mid-July to mid-Oct.

P. Curtissii Gray.

Rare, in open sandy soil of the Coastal Plain: Elkton (Cè), *J. J. Carter*, 29 July 1884 (A, P); near the pond, Goldsboro (Ca), *Otis*, 13 Aug. 1924 (D); head of Choptank Pond, 1 mi. e. of Henderson (Ca), *Otis*, 18 Aug. 1924 (A). July, Aug.

P. cruciata L.

Frequent in wet sandy places and brackish meadows of the Coastal Plain; chiefly in the eastern half of the Peninsula. Late July to mid-Oct.

P. verticillata L. var. isocycla Fern. *Rhodora* 40, 334. 1938.

Infrequent in dry fields, Piedmont, and southward to Wicomico County; also in coastal dune hollows in Sussex County. Mid-July through Sept.

Polygala POLYGALACEAE—EUPHORBIAC. *Crotonopsis*

Var. *ambigua* (Nutt.) Wood. (*P. ambigua* Nutt. See *Rhodora* 42, 460. 1940.)

Frequent in the Piedmont, chiefly in dry barrens, including serpentine; one station on the Coastal Plain: roadside, Cheswold (K), *J. H. Holmes*, 18 Aug. 1890 (D).

P. lutea L. ORANGE MILKWORT.

Common in moist, sandy places, Caroline and Sussex Counties, and southward to Cape Charles. Late May to early Oct.

P. ramosa Ell. PINE-BARREN MILKWORT.

Locally abundant in moist meadows: Felton (K), *Canby* in 1867 and 1870 (D, A, P, U); Ellendale, *Commons*, 16 Aug. 1877 (A), and later collectors. July to Sept.

P. cymosa Walt. TALL PINE-BARREN MILKWORT.

Infrequent in ditches and meadows, Kent (Del.) and Sussex Counties. July to early Sept.

This and the last preceding species appear to reach their northern limit in Kent Co., Del.

EUPHORBIACEAE (SPURGE FAMILY)

Croton L.

C. glandulosus L. var. *septentrionalis* Muell. Arg.

Rare, in waste ground: New Castle, *Commons*, 2 Oct. 1866, (A); sand pit just west of bridge over Choptank River, 1 mi. s. of Choptank Mills (K), *R. R. Tatnall*, 5144, 27 Sept. 1944 (T, A).

C. capitatus Mx.

One collection: cultivated ground, $1\frac{3}{4}$ mi. s. w. of Unionville (Ta), *Earle*, 3671, 30 July 1942 (A, P).

C. texensis Muell. Arg.

One collection: dry sand, Seaford (S), *Commons*, 10 Sept. 1896 (A). Adv. from southwestern U. S.

Crotonopsis Mx.

C. elliptica Willd. (*C. linearis* Mx.)

On barrens and dry sterile soil of the Coastal Plain; rare northward: Grays Hill barrens, near Elkton (Ce), *Long*, 27 June 1928 (A); and *R. R. Tatnall*, 1320, 10 Oct. 1931 (T); common southward to Wicomico County, especially on railroad ballast. Aug., Sept.

Mercurialis L.

M. annua L.

A waif from Europe, collected by *E. Tatnall* and by *A. Commons*, on a wharf at Wilmington, in 1897 (A, D, U).

Acalypha L. THREE-SEEDED MERCURY.

See Weatherby: *Rhodora* 29, 193-204 (1927), and 39, 14-16 (1937).

A. rhomboidea Raf. (*A. virginica* of authors.)

Common in the northern counties; rare or neglected southward: Salisbury (Wi), *Tidestrom*, 7444, in 1914 (U); ditch 1½ mi. n. of Cheriton (No), *R. R. Tatnall*, 3518, 3 Oct. 1937 (T). July to Mid-Sept.

A. gracilens Gray.

Infrequent in dry woods and fields, throughout our area. Early Aug., Sept.

A. virginica L. (*A. digyneia* Raf.)

Frequent in woods and waste ground of the Piedmont, and southward on the Coastal Plain, at least to Wicomico County. Aug., Sept.

Ricinus L. CASTOR-OIL PLANT.

R. communis L.

An occasional escape from cultivation, New Castle County.

Phyllanthus L.

P. caroliniensis Walt.

Infrequent in alluvial or moist sandy soil of the Coastal Plain; rare in the Piedmont: Conowingo (Ce), *Van Pelt*, 1 Sept. 1909 (A). Aug. to early Oct.

Walter (Fl. Car., 228 (1788)) spelled the specific name as above.

Euphorbia L. SPURGE.

E. polygonifolia L. SEASIDE SPURGE.

Common on sea beaches of the Coastal Plain; one inland station: Ellendale (S), *C. S. Williamson*, 29 Aug. 1908 (A). Early Aug. into Oct.

Sussex

E. maculata L. (*E. Preslii* Gussoni; *E. nutans* Lag. See Wheeler: Rhodora 43, 143-150. 1941.)

Frequent as a weed in fields and waste places, Piedmont and Coastal Plain provinces. Aug. into Oct.

† **E. supina** Raf. (*E. maculata* of Am. authors. Wheeler l. c., p. 254.)

Common weed of waste and cultivated ground and sandy shores. July into Oct. *June - 1944*

E. hexagona Nutt.

One known collection: waste ground in Wilmington, *Commons*, 8 Aug. 1899 (A, D). Probably adv. from western U. S.

E. corollata L. FLOWERING SPURGE.

Frequent in open sandy soil, Piedmont, and Coastal Plain north of the Virginia line. June to Aug.

E. marilandica Greene.

Rare: bank of Choptank River, near Goldsboro (Ca), *Otis*, 13 Aug. 1924 (D, A, P, G).

E. Ipecacuanhae L.

Frequent in sandy soil of the Coastal Plain. May.

E. purpurea (Raf.) Fern. (*E. Darlingtonii* Gray. See Fernald: Rhodora 34, 25-26. 1932.)

Rare, in the Piedmont province: Rock Springs (Ce), *J. J. Carter*, June 1869 (A); "swamp west of Hockessin" (NC), *Commons*, 8 June 1881 (A); along brook 1 mi. w. of Porters Bridge (Ce), *Long*, 32160, 2 May 1925 (A); woods 1½ mi. n. of Rowlandsville (Ce), *R. R. Tatnall*, 203, 23 Sept. 1928 (T).

E. Helioscopia L. WARTWEED.

Occasional escape from cultivation: roadside n. e. of Pocomoke (Wo), *Moldenke*, 19 May 1930 (P); field 2 mi. s. of Princess Anne (So), *R. R. Tatnall*, 1148, 31 May 1931 (T, G). Nat. from Europe.

E. Cyparissias L. CYPRESS SPURGE.

Infrequent escape from cultivation, New Castle and Talbot Counties, and probably elsewhere. Introd. from Europe.

E. Peplus L. PETTY SPURGE.

Rare: shipyard in Wilmington, *Canby* in 1863 (A), and *E. Tat-*

Euphorbia CALLITRICHAC.—ANACARDIACEAE *Rhus*
nall, 30 Oct. 1897 (D). Adv. from Europe, probably on ship's
ballast.

E. Lathyrus L. CAPER SPURGE.

Infrequent escape from cultivation in the northern counties.
Intro. from Europe.

E. falcata L.

One collection: on ballast of abandoned railroad at east end of
Vienna bridge, $2\frac{3}{4}$ mi. w. of Mardela Springs (Wi), *R. R. Tatnall*,
4580, 2 Aug. 1940 (T, A). Adv. from Europe.

CALLITRICHACEAE (WATER STARWORT FAMILY)

Callitriche L. WATER STARWORT.

C. Austini Engelm. (*C. deflexa* A. Br. var. *Austini* (Engelm.)
Hegelm.)

Infrequent in shaded muddy places, Piedmont and Coastal
Plain in the northern portion. Frt. June.

C. palustris L.

Infrequent, in shallow water, Piedmont of New Castle County,
and southward on the Coastal Plain to northern Accomac County.
Frt. late May, early June.

C. heterophylla Pursh.

Common in ponds, ditches and slow streams, throughout the
Peninsula. Frt. mid-April through July.

LIMNANTHACEAE (FALSE MERMAID FAMILY)

Floerkea Willd. FALSE MERMAID.

F. proserpinacoides Willd.

Common in moist alluvial soil, northern New Castle and Cecil
Counties. Early May.

ANACARDIACEAE (CASHEW FAMILY)

Rhus L. SUMAC.

R. typhina L. (*R. hirta* (L.) Sudw.) STAGHORN SUMAC.

Infrequent, in dry soil, New Castle and Cecil Counties; less
common farther south: 2 mi. n. e. of Longwoods (Ta), *R. R.*

Tatnall, 2952, 4 June 1936 (T); 4 mi. n. w. of Easton (Ta), *Earle*, 1753, 3 Aug. 1938 (P). June.

R. glabra L. SMOOTH SUMAC.

Common in dry soil of the Piedmont; seldom collected on the Coastal Plain: near Trappe (Ta), *Earle*, 2239, in 1939 (P). June, July.

R. copallina L. DWARF SUMAC.

Common in dry soil, salt marshes and coastal sands, practically throughout the Peninsula. July, Aug. *Summer*

R. Vernix L. (*R. venenata* DC.) SWAMP SUMAC. POISON SUMAC.

Frequent in swampy ground, chiefly on the Coastal Plain near the Fall Line; seldom collected farther south. Late May through June.

✓ **R. radicans L. See Fernald: *Rhodora* 43, 589-599. 1941. POISON IVY.**

Common everywhere. May, June. *Summer*

R. Toxicodendron L. (*R. quercifolia* (Mx.) Steud. See Fernald, l. c.) POISON OAK.

Less common than the last, in sandy soil of the Coastal Plain.

AQUIFOLIACEAE (HOLLY FAMILY)

***Ilex* L. HOLLY.**

I. opaca Ait. AMERICAN HOLLY.

Common from Cape Charles northward on the Coastal Plain, where it frequently attains a diameter of a foot or more; less frequent in the Piedmont. Fl. May, June. *Summer*

I. vomitoria Ait. CASSENA. YAUPON.

Rare, in southern Northampton County: south shore of Old Plantation Creek, w. of Capeville, *Mrs. R. R. Tatnall* (R. R. T. 1796), 28 May 1933 (A, P, T, G), and later collections; near Townsend, *Fernald, Long & Fogg*, 5354, in 1935 (G, P, T). Fl. May.

I. verticillata (L.) Gray. BLACK ALDER. WINTERBERRY.

Common in moist thickets, from the Pennsylvania line southward at least to Worcester County. Fl. mid-June to early July.

***I. laevigata* (Pursh) Gray. SMOOTH WINTERBERRY.**

Frequent in swampy ground, from the Fall Line southward to Accomac County, apparently avoiding the coast. Fl. May, early June.

***I. glabra* (L.) Gray. INK BERRY.**

Common in swampy ground and on coastal sands, Sussex County and southward; rare in s. e. New Castle County, in and near the Cedar Swamp: *Commons & Tatnall*, in 1863 (A, D); *Long*, 57772, in 1942 (A). Fl. June.

CELASTRACEAE (STAFF TREE FAMILY)

***Evonymus* L.**

***E. atropurpureus* Jacq. BURNING BUSH.**

Infrequent, in the Piedmont province, in alluvial soil and on rocky hillsides. Fl. June.

***E. americanus* L. BURNING BUSH. STRAWBERRY TREE.**

Common in rich woods, and in sandy pinelands, throughout the Peninsula, but usually avoiding the coast. Fl. late May, early June.

***Celastrus* L.**

✓ ***C. scandens* L. CLIMBING BITTER-SWEET.**

Frequent in thickets and hedgerows of the Piedmont; less common southward to Talbot and Caroline Counties. Fl. late May, June.

STAPHYLEACEAE (BLADDER NUT FAMILY)

***Staphylea* L.**

***S. trifolia* L. AMERICAN BLADDER NUT.**

Common in rocky woods of the Piedmont. Late April, May.

ACERACEAE (MAPLE FAMILY)

***Acer* L. MAPLE.**

***A. saccharum* Marsh. SUGAR MAPLE.**

Rare in the Piedmont of New Castle County: near Granogue Station, *Canby* in 1897 (D); rocky slope above Rockland, *Long*, 32291, 14 May 1925 (A). April.

Acer SAPINDACEAE—BALSAMINACEAE *Impatiens*

Var. **nigrum** (Mx. f.) Britton. BLACK SUGAR MAPLE.

Rare: roadside near Guyencourt (NC), *Commons* in 1873 and 1893 (A).

A. saccharinum L. (*A. dasycarpum* Ehrh.) SILVER MAPLE.

Infrequent, on streambanks and roadsides, chiefly in the Piedmont province. March, April.

A. rubrum L. RED MAPLE. SWAMP MAPLE.

Common along streams and in wet places of the Piedmont; less frequent southward on the Coastal Plain to Accomac County. Late March, April.

Var. **trilobum** K. Koch. (Var. *tridens* Wood. See *Rhodora* 47, 217. 1945.)

Infrequent, in the northern part of the Coastal Plain.

A. platanoides L. NORWAY MAPLE.

"Well naturalized" at one station: wooded bank near Southwood (NC), *Long*, 39578, 22 April 1933 (A). Introd. from Europe.

A. Negundo L. (*Negundo aceroides* Moench.) ASH-LEAVED MAPLE.
BOX ELDER.

Along streams; common in the Piedmont; less so southward to Sussex and Talbot Counties. April.

SAPINDACEAE (SOAP BERRY FAMILY)

Cardiospermum L.

C. Halicacabum L. BALLOON VINE.

Escaping from cultivation, and persisting in waste ground in Wilmington. Introd. from tropical America.

BALSAMINACEAE (TOUCH-ME-NOT FAMILY)

Impatiens L. BALSAM. JEWEL WEED.

I. pallida Nutt. PALE TOUCH-ME-NOT.

Infrequent, in moist ground of the Piedmont area. July to early Sept.

I. biflora Walt. (*I. fulva* Nutt.) JEWEL WEED. SPOTTED TOUCH-ME-NOT.

Common in moist ground, Piedmont, and southward on the Coastal Plain to Worcester County. July to early Sept.

RHAMNACEAE (BUCKTHORN FAMILY)

Berchemia Necker.

B. scandens (Hill) Trel. SUPPLE JACK.

Known only from Chincoteague Island (Ac), where it climbs over shrubs on the low ridges between "swales," just w. of the village: *Canby* in 1878 (A); *True* in 1926 (P); *F. M. Jones & R. R. Tatnall*, 329, 31 May 1929 (T, G). Late May, early June.

Rhamnus L. BUCKTHORN.**R. cathartica** L.

Planted for hedges, and escaping to waste ground and roadsides about Wilmington. Introd. from Europe.

Ceanothus L.**C. americanus** L. NEW JERSEY TEA.

In dry open woods; frequent in the Piedmont area; occasional southward on the Coastal Plain: *Ellendale* (S), *Canby*, July 1893 (D); *H. K. Henry*, 10 June 1929 (P); pine woods s. of Accomac (Ac), *R. R. Tatnall*, 4212, 9 June 1939 (T); near Goldsboro (Ca), *Otis*, 13 Aug. 1924 (A). Early June, July.

Var. **intermedius** (Pursh) K. Koch.

Two mi. s. e. of North East (Ce), *Long*, 54405, 30 May 1940 (A). "First between New England and Virginia."

VITACEAE (GRAPE FAMILY)

Parthenocissus Planch.

P. quinquefolia (L.) Planch. (*Psedera quinquefolia* (L.) Greene.)
VIRGINIA CREEPER.

Frequent in woods and thickets of the Piedmont; common in hedgerows, margins of woods and coastal sands, southward to Accomac County. Fl. early June through July. *Ward*

Vitis L. GRAPE.**V. Labrusca** L. NORTHERN FOX GRAPE.

Common in moist thickets, Piedmont and Coastal Plain. Fl. late May, early June. Frt. Sept., Oct.

V. aestivalis Mx. SUMMER GRAPE.

Thickets, throughout; common in the Piedmont, and southward to Wicomico County; less frequent south of the Virginia line. Fl. late May, June; frt. Sept., Oct.

V. vulpina L. (*V. cordifolia* Mx. See *Rhodora* 41, 431-434. 1939.)
CHICKEN GRAPE.

Thickets; frequent in the Piedmont; less common southward to Talbot County. Fl. June; frt. Sept., Oct.

V. riparia Mx. (*V. vulpina* of authors.) FROST GRAPE.

Rare, on the Coastal Plain: Ocean City (Wo), *Canby*, 804, without date (U).

V. rotundifolia Mx. MUSCADINE. SOUTHERN FOX GRAPE.

Common in thickets and on river banks, Cape Charles, and northward to southern Sussex County. Fl. late May, early June; frt. Sept.

A southern species, reaching its northern limit in Sussex County, Del.

TILIACEAE (LINDEN FAMILY)

Tilia L.

T. americana L. AMERICAN LINDEN. BASSWOOD.

Frequent on stream banks in the Piedmont of New Castle County. Late June, early July.

MALVACEAE (MALLOW FAMILY)

Abutilon Mill. INDIAN MALLOW.

A. Theophrasti Medic. (*A. Avicennae* Gaertn.)

Common weed of cultivated and waste ground. Aug., Sept. Nat. from India.

Modiola Moench.

M. caroliniana (L.) G. Don.

One collection: waif on a wharf in Wilmington, *Tatnall & Commons*, 6 Nov. 1897 (A). Probably introduced from southeastern U. S.

Sida L.

S. hermaphrodita (L.) Rusby.

Rare: on railroad right-of-way, bank of Susquehanna River, 1¾

mi. n. of Bald Friar Station, at the extreme n. w. corner of Cecil County, *L. F. A. Tanger*, 3393, 20 July 1939 (A, P); and *R. R. Tatnall*, 4554, 27 July 1940 (T, G, A). Late July.

S. spinosa L.

A weed in cultivated ground and pastures; infrequent in the Piedmont area; occasional on the Coastal Plain: Ocean City (Wo), *Canby* in 1894 (D); near Easton (Ta), *Earle*, 3028, 2 Sept. 1940 (P). Nat. from tropical America.

Althaea L.

A. rosea Cav. HOLLYHOCK.

Cultivated, and escaping to waste ground in New Castle County, and probably elsewhere.

Malva L. MALLOW.

M. neglecta Wallr. (*M. rotundifolia* L. See *Rhodora* 39, 98-99. 1937.) CHEESES.

A frequent weed about farm yards. July, Aug. Nat. from Europe.

M. verticillata L. CURLED MALLOW.

One collection: waste ground, Wilmington, *Commons*, 19 June 1898 (A). Adv. from Europe.

M. sylvestris L. HIGH MALLOW.

Infrequent escape from cultivation in New Castle County; also in a cultivated field 2 mi. s. of Princess Anne (So), *R. R. Tatnall*, 1147, 31 May 1931 (T, P, G). Introd. from Europe.

M. moschata L. MUSK MALLOW.

Infrequent; fields and roadsides, northern New Castle County. Mid-June to mid-Aug. Nat. from Europe.

Kosteletzkya Presl.

K. virginica (L.) Presl.

Common on borders of salt marshes, from central New Castle County at least as far south as northern Accomac County. Late Aug., Sept.

Hibiscus L.

H. syriacus L. SHRUBBY ALTHAEA. ROSE OF SHARON.

Frequently escaping from cultivation in New Castle County. Introd. from western Asia.

Hibiscus TERNSTROEMIIAC.—HYPERICAC. *Hypericum*

7 ✓ *H. palustris* L. (*H. Moscheutos* L. *H. oculiroseus* Britton.)
ROSE MALLOW. SWAMP MALLOW.

Common on the Coastal Plain, in marshes near the coast, and on river banks, usually in salt or brackish water. Late July to early Sept. *Susquehanna*

H. Trionum L. FLOWER-OF-AN-HOUR.

Rather frequent in cultivated and waste ground. Aug., Sept. Nat. from Europe.

TERNSTROEMIIACEAE (TEA OR CAMELLIA FAMILY)

Stewartia L.

S. Malachodendron L.

One station: "head of Messongo Creek" (Ac), *Ellis Mears*, in 1886 (G, A). Fl. mid-June.

Not found in recent years, although carefully searched for.

HYPERICACEAE (ST. JOHN'SWORT FAMILY)

Ascyrum L.

A. stans Mx. ST. PETER'S-WORT.

Frequent in low ground of the Coastal Plain; pinelands, dune hollows along the coast, and borders of salt marshes. Late July to mid-Sept.

A. Hypericoides L. var. *multicaule* (Mx.) Fern. See *Rhodora* 38, 430-433. 1936. ST. ANDREW'S CROSS.

Common in dry, sandy soil of the Coastal Plain and Piedmont. July, mid-Aug.

Var. *oblongifolium* (Spach) Fern.

Infrequent; dry, sandy soil, Northampton and Accomac Counties.

Hypericum L. ST. JOHN'S-WORT.

H. Ascyron L. GREAT ST. JOHN'S-WORT.

Rare, on islands in the Susquehanna River: Conowingo, *J. Crawford*, 27 July 1924 (A). Locality now submerged.

✓ *H. perforatum* L. COMMON ST. JOHN'S-WORT.

Common weed in dry ground; fields and roadsides. June. Nat. from Europe. *Susquehanna*

H. punctatum Lam.

Common throughout, in swampy ground, and in borders of salt marshes; infrequent on rocky hillsides. July, early Aug.

H. prolificum L. SHRUBBY ST. JOHN'S-WORT.

Rare, in either wet or dry soil of the Piedmont and northern Coastal Plain: river shore, Conowingo, *S. Brown*, 1 Sept. 1909 (A), and *Pennell*, 1 July 1914 (A); railroad bank at Wilson station (NC), *R. R. Tatnall*, 1913, 8 July 1933, and later collections (T, G, A, P). July.

H. densiflorum Pursh.

Infrequent in swampy places and on sandy river shores, from the Fall Line to Somerset County. July to early Sept.

H. adpressum W. P. C. Barton.

Infrequent in swamps and meadows of the Coastal Plain. July, Aug.

H. ellipticum Hooker.

Rare, on river shores of the Piedmont and northern Coastal Plain: Delaware River at Grubb's Landing (NC), *Canby*, June 1886 (D, A); North East (Ce), *S. Brown*, 4 July 1903 (A); river bed, Conowingo (Ce), *E. B. Bartram*, 4 July 1907 (A), and *Pennell*, 1 July 1914 (A), this locality now submerged. Mid-June, early July.

✓ **H. denticulatum** Walt. var. **ovalifolium** (Britton) Blake. (*H. virgatum* Lam. var. *ovalifolium* Britton.)

Frequent in ditches and wet meadows of Sussex County; one collection near Wilmington: "south side Christiana Creek," *Commons*, 16 Sept. 1899 (A). Early July to early Sept.

H. boreale (Britton) Bicknell.

Rare, in wet places in southern Delaware: Ellendale (S), *C. S. Williamson*, 29 Aug. 1908 (A); edge of Tubmill Pond (K), 2 mi. n. of Milford, *R. R. Tatnall*, 2760, 31 Aug. 1935 (T, P, G); dune hollows s. of Bethany Beach (S), *Fogg*, 11261, 28 Aug. 1936 (P). Early July, Aug.

H. mutilum L. DWARF ST. JOHN'S-WORT.

Common throughout, in meadows, ditches and swampy woods. July to early Sept.

H. gymnanthum Engelm. & Gray.

Infrequent in low ground of the Coastal Plain, from the Fall Line to Worcester County. July.

H. majus (Gray) Britton.

One collection: "Christiana Hundred" (NC), *Commons* in 1872 (A).

H. canadense L.

Common throughout, in swampy woods, pond margins and dune hollows. July to early Sept.

H. Drummondii (Grev. & Hook.) T. & G.

One collection: 2¼ mi. s. w. of Longwoods (Ta), *Earle*, 4012, 1 Oct. 1944 (P, A).

H. gentianoides (L.) BSP. (*H. Sarothra* Mx.) PINEWEEED.

Common in sandy soil throughout. Mid-June into Sept. *Summer*

H. virginicum L. PINK ST. JOHN'S-WORT.

Frequent in swamps and margins of ponds, Piedmont, and southward on the Coastal Plain to Worcester County. Aug., early Sept. *Summer*

H. petiolatum Walt. (*H. tubulosum* Walt. var. *Walteri* (Gmel.) Lott. See Fernald: *Rhodora* 47, 217. 1945.) LARGE PINK ST. JOHN'S-WORT.

Frequent in swamps and pond margins, throughout the Coastal Plain. Aug., early Sept.

ELATINACEAE (WATERWORT FAMILY)

Elatine L. WATERWORT.

E. americana (Pursh) Arn. See Fernald: *Rhodora* 43, 208. 1941.

Infrequent in tidal mud of the Coastal Plain, from New Castle and Cecil Counties to Wicomico County. Early June to mid-Oct.

E. minima (Nutt.) Fisch. & Mey.

Known only from the sandy shore of Wicomico River, near Salisbury (Wi), *Canby*, in 1863 and 1864 (A).

CISTACEAE (ROCK-ROSE FAMILY)

Helianthemum Mill. ROCK-ROSE.**H. canadense** (L.) Mx. FROSTWEED.

Frequent on the Coastal Plain, from the Fall Line southward to northern Accomac County, in dry woods and thickets, and on open banks. Petaliferous fl. May to July.

H. Bicknellii Fern. (*H. majus* of authors.)

Infrequent, usually on serpentine soil, New Castle and Cecil Counties. Petaliferous fl. late May, June.

H. propinquum Bicknell.

Infrequent, in dry sand of the Coastal Plain, from near the Fall Line southward to Sussex and Wicomico Counties. Petaliferous fl. late May through June.

Hudsonia L.**H. ericoides** L. PINE BARREN "HEATHER."

Rare, in dry sandy soil of the seacoast: sandy pineland, Cape Henlopen (S), *Commons* in 1895 and 1898 (A); along the railroad, 3 mi. n. w. of Rehoboth (S), *R. R. Tatnall*, 2578, 30 May 1935 (T, P, G), and 3695, 16 May 1938 (T). Mid-May, early June.

H. tomentosa Nutt. BEACH "HEATHER."

Common on sands of the shore, Sussex and Worcester Counties; less frequent in Northampton and Accomac Counties. Mid-May to late May.

Lechea L. PINWEED.

See Hodgdon's monograph, with Key: *Rhodora* 40, 29-69 and 87-131 (1938).

L. villosa Ell. LARGE HAIRY PINWEED.

Rare, in dry soil: Ellendale (S), *Commons*, 17 Aug. 1899 (A); Choptank Mills (K), *Otis*, 13 Aug. 1924 (A); grassy bank 1 mi. s. of Choptank Mills, *R. R. Tatnall*, 5151, 27 Sept. 1944 (T). Late July to Sept.

L. minor L. THYME-LEAVED PINWEED.

Infrequent, in the Piedmont, chiefly on serpentine soil, and in dry sand of the Coastal Plain, from the Fall Line southward to Northampton County. Early Sept. to mid-Oct.

✓ **L. maritima** Leggett. BEACH PINWEED.

Frequent in Sussex and Worcester Counties, on coastal sands. Sept., early Oct. *Sussex.*

Var. *virginica* Hodgdon.

Rare: dunes on Savage Neck (No), s. w. of Eastville, *Fernald, Long & Fogg*, 5377, 11 Oct. 1935.

L. Leggettii Brit. & Holl.

Common in dry sandy soil, throughout. Mid-July to early Sept.

L. racemulosa Mx.

Frequent in dry sandy soil of the Coastal Plain, from the Fall Line southward to Talbot and Sussex Counties. Aug. to mid-Sept.

VIOLACEAE (VIOLET FAMILY)

Hybanthus Jacq. GREEN VIOLET.

H. concolor (Forster) Spreng. (*Cubelium concolor* (Forster) Raf.)

Infrequent, but locally abundant, on rocky slopes along the Brandywine and Red Clay Creeks (NC), and the Susquehanna River (Ce), preferring the base of the slope. Early to late May.

Viola L. VIOLET.

Flowering dates refer to the petaliferous flowers.

V. pedata L. BIRD-FOOT VIOLET.

Infrequent, on rocky banks of the Piedmont province; frequent on dry sandy soil of the Coastal Plain, southward at least to Sussex County. Late April to mid-May.

Var. *lineariloba* DC.

Similar habitats; on Elk Neck (Ce), on the Coastal Plain.

V. cucullata Ait. BLUE MARSH VIOLET.

In wet places; common from the Pennsylvania line southward at least to Sussex and Talbot Counties; one collection from northern Accomac County: swamp e. of Wattsville, *R. R. Tatnall*, 4450, 28 April 1940 (T). Mid-April, May.

V. affinis LeConte.

Infrequent along the Susquehanna River; rare on the Coastal

Plain: woods along Peachblossom Creek, s. of Easton (Ta), *F. R. Fosberg*, 14586, 16 April 1938 (P). Mid-April, May.

V. papilionacea Pursh.

Infrequent in woodlands of the Piedmont; rare on the Coastal Plain: along Duffy Creek, s. e. of Cecilton (Ce), *Benner*, 7091, 16 May 1936 (A). Mid-April to mid-May.

V. Stoneana House. WITMER STONE'S VIOLET.

Infrequent in rocky woods of the Piedmont, New Castle and Cecil Counties. May.

V. palmata L.

Infrequent, in northern New Castle County; rare farther south: 7 mi. w. of Princess Anne (So), *F. R. Fosberg*, 14593, 17 April 1938 (P); Longwoods (Ta), *Earle*, 3543, 10 May 1942 (P). Late April, mid-May.

V. triloba Schwein.

Common in rich woodlands of the Piedmont province; infrequent southward to Queen Anne's County. Late April, mid-May.

V. sororia Willd.

Infrequent, in woods and fields, New Castle and Cecil Counties. Late April, mid-May.

V. hirsutula Brainerd.

Infrequent, in dry or moist woods of the two northern Counties. Late April, May.

V. fimbriatula J. E. Smith.

Infrequent, in dry sandy soil, including serpentine, New Castle County; one collection from the Coastal Plain: ditch bank, Angola Neck (S), *R. R. Tatnall*, 2889, 9 May 1936 (T, P, A, G). Late April, mid-May.

V. sagittata Ait. (Including var. *glabra* Pennell, in *Bartonia* No. 12, pp. 13-20. 1930.)

Frequent in the Piedmont area, in moist woods and on dry banks, often on serpentine soil; less common in dry sand and brackish meadows, southward to Talbot and Sussex Counties; rare south of the Virginia line: Temperanceville (Ac), *F. R. Fosberg*, 14605, 18 April 1938 (P). Late April, mid-May.

V. emarginata (Nutt.) Leconte.

Infrequent, on dry banks and in sandy pine woods and brackish meadows, from southern New Castle County to Northampton County. Late April to early June.

V. Brittoniana Pollard.

Rare in the Piedmont area; Mt. Cuba (NC), *E. Tatnall* in 1894 (D); frequent in sandy swamps and brackish meadows, southern New Castle County to Sussex County; one collection in Accomac County: dry sandy pineland, 2 mi. s. of Accomac, *R. R. Tatnall*, 3779, 22 May 1938 (T). Late April through May.

V. lanceolata L. LANCE-LEAVED VIOLET.

Common in wet places, Piedmont and Coastal Plain, southward to Wicomico County; infrequent south of the Virginia line. Mid-April into June.

V. primulifolia L. PRIMROSE-LEAVED VIOLET.

Common in swamps, ditches and wet woods, throughout. Late April to early June.

V. pallens (Banks) Brainerd. SWEET WHITE VIOLET.

Frequent in bogs and low woods of northern New Castle County; rare farther south: bog $2\frac{1}{4}$ mi. s. of Milton (S), *R. R. Tatnall*, 3243, 11 April 1937 (T), and 4811, 25 April 1941 (A, G). Mid-April to late May.

V. blanda Willd. RED-STEMMED WHITE VIOLET.

Frequent in rocky woods, and on cold, wet banks of the Piedmont; rare in the northern Coastal Plain area: New Castle, *J. T. Pennypacker*, 23 April 1892 (D). Mid-April, May.

V. rotundifolia Mx. ROUND-LEAVED VIOLET. EARLY YELLOW VIOLET.

Cold, wet, shaded banks; rare: on a springy, north-facing roadside bank, Wooddale (NC), *Commons* in 1856, and many later collections by Commons and others (T, D, A, G); persisting at this station up to the present time; Mt. Cuba (NC), *J. Crawford*, 13 May 1892 (A); 1 mi. n. by e. of Centreville (NC), *R. R. Tatnall*, 1766, 20 May 1933, and several later numbers (T, A). Reported by *Commons* from Greenbank, Ashland and Pike Creek (all NC), but no specimens seen from these localities. Early to late April.

V. pubescens Ait. DOWNY YELLOW VIOLET.

Infrequent, in rich, rocky woods of the Piedmont province. Early April to mid-May.

V. eriocarpa Schwein. (*V. scabriuscula* Schw.) SMOOTH YELLOW VIOLET.

Common in rocky woods of the Piedmont; rare on the Coastal Plain: $\frac{1}{2}$ mi. e. of Betterton (Ke), *F. S. Fender*, 1254, 11 April 1936 (P); moist woods 1 mi. s. of Coochs Bridge (NC), *R. R. Tatnall*, 5079, 4 May 1944 (T, A). Mid-April through May.

V. striata Ait. CREAM VIOLET.

Frequent in low, shaded ground, Piedmont. Late April, May.

V. conspersa Reichb. (*V. Muhlenbergii* Torr.) DOG VIOLET.

Frequent in rocky woods and on dry banks of the Piedmont; rare on the Coastal Plain: $1\frac{1}{2}$ mi. s. of Bohemia Mills (Ce), *Benner*, 4467, 7 May 1932 (A), and *R. R. Tatnall*, 3289, 13 May 1937 (T, P). Late April through May.

V. arvensis Murr. WILD PANSY.

Occasional on roadsides and in fields: roadside near Tubmill Pond (K), 2 mi. n. of Milford, *R. R. Tatnall*, 1727, 7 May 1933 (T, P, A); 1 mi. e. of Bridgeville (S), *R. R. Tatnall*, 3237, 11 April 1937 (T, P); sandy roadside $1\frac{1}{2}$ mi. w. of Porter (NC), *R. R. Tatnall*, 5107, 8 June 1944 (T, A). Nat. from Europe.

V. Kitaibeliana R. & S. var. *Rafinesquii* (Greene) Fern. (*V. Rafinesquii* Green.) FIELD PANSY.

Common on roadsides and in cultivated ground, throughout the Peninsula north of the Virginia line. Early April to early May.

V. tricolor L. PANSY.

Cultivated and occasionally spontaneous. Introd. from Europe.

PASSIFLORACEAE (PASSION FLOWER FAMILY)

Passiflora L. PASSION FLOWER.

P. lutea L.

Local, in sandy woods and thickets of the Coastal Plain: Tolchester Beach (Ke), *C. S. Williamson*, 4 Sept. 1905 (A); damp woods at Custis Ponds, Savage Neck (No), *R. R. Tatnall*, 3608, 3 Oct.

1937 (T); thicket on Long Point (Ta), 5½ mi. w. of Easton (Ta), Earle, 2777, 5 July 1940 (P).

P. incarnata L. MAYPOPS.

Rare: known only from Wicomico County: Bivalve, *J. J. Carter*, 12 June 1906 (A); Sharptown, *Otis*, 8 July 1914 (D); Salisbury, (*A. V. Smith*), *R. R. Tatnall*, 4560, 1 Aug. 1940 (T, P).

CACTACEAE (CACTUS FAMILY)

Opuntia Mill. PRICKLY PEAR.

O. Opuntia (L.) Karst. (*O. vulgaris* of authors.)

Common in dry sand, Sussex County and southward to Cape Charles. June.

H O. humifusa Raf. (*O. Pollardi* Brit. & Rose.)

One station: hemlock grove 2½ mi. s. of Hillsboro (Ca), *R. R. Tatnall*, 3118, 22 Aug. 1936 (T).

This record should be regarded as tentative. It seems probable that we are not justified in maintaining more than one species for the Peninsula.

THYMELAEACEAE (MEZEREUM FAMILY)

Dirca L.

D. palustris L. LEATHERWOOD.

Rare, in rich, rocky woods along Brandywine and Red Clay Creeks, New Castle County: Mt. Cuba, *Commons*, 3 June 1864, and several later collections (A, T, P); west bank of Brandywine Creek, ¼ mi. below Henry Clay bridge, *R. R. Tatnall*, 10 April 1888, and many later numbers (T, P, G), including *Long*, 22 April 1933 (A). Early to late April.

LYTHRACEAE (LOOSESTRIFE FAMILY)

Rotala L.

R. ramosior (L.) Koehne. (*Ammannia humilis* Mx.)

Infrequent, in shallow pools, wet muddy places and moist dune hollows on the Coastal Plain. July to early Sept.

***Ammannia* L.**

A. Koehnei Britton.

One collection: Greenbackville (Wo), *Shreve & Jones*, 1109, 11 Aug. 1906 (U).

Decodon J. F. Gmel.

D. verticillatus (L.) Ell. (*Nesaea verticillata* HBK.) WATER WILLOW.

Common in swamps and shallow ponds on the Coastal Plain, from the Fall Line southward to Wicomico County; occasional in the Virginia counties: swampy woods s. of Kendall Grove (No), *Fernald, Long & Fogg*, 5387, in 1935 (G, P, A). Aug., early Sept.

***Lythrum* L. LOOSESTRIFE.**

L. lineare L.

Common in brackish marshes and salt meadows, from Queen Anne's County southward to Sussex and Worcester Counties. Early Aug. through Sept.

L. Salicaria L. PURPLE LOOSESTRIFE.

Infrequent, in marshes and borders of ponds and streams, New Castle County; Piedmont and Coastal Plain. July to mid-Sept.

***Cuphea* P. Browne.**

C. petiolata (L.) Koehne. (*C. viscosissima* Jacq.) CLAMMY CUPHEA.

Frequent; fields and roadsides, Piedmont, and southward on the Coastal Plain at least to Talbot County. Late July to mid-Sept.

MELASTOMACEAE (MELASTOMA FAMILY)

***Rhexia* L. DEERGRASS. MEADOW BEAUTY.**

R. virginica L.

Frequent in wet fields and swampy ground, from the Fall Line to Sussex County; rare south of the Virginia line: peaty clearing south of Townsend (No), *Fernald, Long & Fogg*, 5388, in 1935 (P). Mid-July to mid-Sept.

R. aristosa Britton.

Rare and local, in sandy swamps and upland meadows: Ellendale (S), *Canby*, 24 July 1893 (D), and several later collectors; one collection at Wilmington, "South side of Christiana Creek," *Commons*, 21 Sept. 1896 (A). Late July through August.

R. mariana L.

Common in bogs and on borders of salt marshes, on the Coastal Plain, from the Fall Line to Worcester County; infrequent in the Virginia Counties. Early July to mid-Sept.

ONAGRACEAE (EVENING PRIMROSE FAMILY)

Jussiaea L.

J. diffusa Forsk.

One station: pond at West Main Station, Salisbury (Wi), (A. V. Smith), *R. R. Tatnall*, 3979, 8 Sept. 1938 (T, G).

Ludwigia L.

✓ **L. alternifolia** L. SEED BOX.

Common in low woods, swamps and salt marshes, Piedmont, and Coastal Plain southward to Sussex County; occasional farther south: Crisfield (So), *J. H. Holmes*, in 1890 (D); Exmore (No), *R. R. Tatnall*, 3010, 19 July 1936 (T). July, August. *Seeds 7-10*

L. hirtella Raf. HAIRY LUDWIGIA.

Infrequent, in sandy swamps, meadows and moist pinebarrens, Sussex County. July, August.

L. sphaerocarpa Ell.

Frequent in ditches and sandy swamps of the Coastal Plain, from southern New Castle County to Wicomico County. Mid-July to mid-Sept.

Var. **jungens** Fern. & Grise.

Rare: Ellendale (S), *Commons*, 1 Sept. 1892 (A); millpond, Angola (S), *R. R. Tatnall*, 2019, 2 Sept. 1933 (T, P, G). (Det. M. L. Fernald.)

L. linearis Walt.

Infrequent; sandy swamps and road ditches, Kent (Del.) County to Worcester and Somerset Counties. July to early Sept.

L. palustris (L.) Ell. var. **americana** (DC) Fern. & Grise. (Rhodora 37, 176. 1935.) MARSH PURSLANE.

Frequent in ditches and on stream margins, from the Fall Line southward to central Accomac County. Mid-June to mid-Sept.

Var. *nana* Fern. & Grise.

Pine woods $3\frac{1}{2}$ mi. n. of Accomac (Ac), *Fernald, Long & Fogg*, 5390, in 1935 (P, T); dune hollows s. of Bethany Beach (S), *Fogg*, 11262, 23 Aug. 1936 (P).

Epilobium L. WILLOW HERB.

E. angustifolium L. FIREWEED.

Frequent in clearings and disturbed ground, Piedmont and northern Coastal Plain. June to early Sept.

E. densum Raf. (*E. lineare* Muhl. Cat.)

Rare, in bogs: near North East (Ce), *Otis* in 1911 (D); $\frac{3}{4}$ mi. s. w. of Seaford (S), *Earle*, 1795, 3 Sept. 1938 (P).

E. coloratum Biehler.

Frequent in low ground, Piedmont area of New Castle and Cecil Counties; infrequent on the Coastal Plain southward to Talbot County (*Earle*) and Sussex County. July to early Sept.

E. glandulosum Lehm. var. adenocaulon (Haussk.) Fern.

Rare, on wharves and in waste ground, Piedmont area: Wilmington, *E. Tatnall*, June 1896 (A); near North East (Ce), *Otis* in 1911 (D); door yard, Claymont (NC), *F. A. McDermott*, 21 July 1931 (T).

Oenothera L.

O. biennis L. EVENING PRIMROSE.

Common in open ground, Piedmont and Coastal Plain of Cecil and New Castle Counties; infrequent southward to southern Kent (Del.) and Talbot Counties. Late June to Sept.

O. humifusa Nutt.

Common on sands of the seacoast, from Cape Charles northward to s. e. Kent County, Delaware. July to early Sept.

O. laciniata Hill.

Frequent in waste places, salt meadows and seashore sands, Piedmont, and southward on the Coastal Plain at least to Wicomico and Worcester Counties. Late April to early July.

O. fruticosa L. (*Kneiffia* Raimann.) SUNDROPS.

Common in dry ground of the Piedmont area, and in fields, low

Oenothera ONAGRAC.—HALORAGIDAC. *Myriophyllum*

ground and salt marshes of the Coastal Plain, southward to Accomac County. Mid-May to July.

O. tetragona Roth. (*Kneiffia fruticosa* Raimann, in part.)

Frequent in woods and fields of the Piedmont area, and on the Coastal Plain near the Fall Line. Mid-June, July.

O. perennis L. (*Kneiffia pumila* (L.) Spach.

Infrequent, in open ground, northern Cecil and New Castle Counties; rare on the Coastal Plain: Selbyville (S), *True*, 221, 21 June 1926 (P); Assateague Island (Ac), *True*, 28 June 1928 (P). Late May to mid-July.

O. speciosa Nutt. (*Hartmannia*, Small.)

Roadsides in Accomac village: *R. R. Tatnall*, 40, 1 June 1928 (T), and later collections (T, P, G). Late May, June.

Gaura L.

G. biennis L.

Infrequent, in or near the Piedmont area. Formerly collected on shores of Delaware River and Christiana Creek, New Castle County, but now known only from woods and hedgerows in Cecil County. Aug. to mid-Sept.

Circaea L.

C. quadrisulcata (Maxim.) F. & S. var. **canadensis** (L.) Hara.
(*C. lutetiana* of authors; *C. latifolia* Hill. See *Rhodora* 41, 386-387. 1939.) ENCHANTER'S NIGHTSHADE.

Common in woods of the Piedmont; less frequent southward at least to Talbot County (*Earle*).

HALORAGIDACEAE (WATER MILFOIL FAMILY)

Myriophyllum L. WATER MILFOIL.

M. verticillatum L. var. **pectinatum** Wallr.

Rare, in water: Delaware City (NC), *Commons & Tatnall*, 22 Sept. 1896 (A); Humphrey Pond, Salisbury (Wi), *Shreve & Jones*, 1208, 18 Aug. 1906 (U).

M. heterophyllum Mx.

Rare, in ponds and slow streams: Morris Pond, n. of Millsboro

Myriophyllum HALORAGIDAC.—ARALIACEAE *Aralia*

(S), *C. S. Williamson*, 5 July 1908 (A); Leipsic (K), *F. C. Daigh*, 24 June 1935 (UD).

M. pinnatum (Walt.) BSP. (*M. scabratum* Mx.)

Infrequent, in ponds and slow streams, Sussex County to Accomac County; one collection in the Cedar Swamp, s. e. corner of New Castle County, *Commons*, in 1867 (A).

M. humile (Raf.) Morong.

Rare; ponds and muddy shores: near Smyrna (K), *Commons*, 10 Oct. 1866 (A); Salisbury (Wi), *Canby*, Sept. 1887 (P); coves in canal at Delaware City (NC), *Commons & Tatnall*, 7 Sept. 1896 (D), and 21 June 1897 (D).

M. brasiliense Cambess. (*M. proserpinacoides* Gill. *Rhodora* 41, 551. 1939.)

Cultivated, and rarely escaping to ponds: Shallcross Lake near Odessa (NC), *R. R. Tatnall*, 1945, 5 Aug. 1933 (A).

Proserpinaca L. MERMAID WEED.

P. palustris L. var. **crebra** Fern. & Griseb. *Rhodora* 37, 177. 1935.

Common in ponds, dune hollows and salt marshes on the Coastal Plain. Early June to Sept.

The typical form occurs in s. e. Virginia and southward. See the above reference.

P. pectinata Lam.

Frequent in swamps and ditches, in Sussex, Wicomico and Worcester Counties. Early July to Oct.

ARALIACEAE (GINSENG FAMILY)

Aralia L.

A. spinosa L. HERCULES CLUB.

Common in woods in the lower half of the Peninsula; infrequent in southern New Castle County; occasional in hedgerows in the Piedmont area of New Castle County, where it is probably either planted or escaped. August.

A. racemosa L. SPIKENARD.

Frequent in rich woodlands of the Piedmont area. July, Aug.

A. nudicaulis L. WILD SARSAPARILLA

Common on rocky hills of the Piedmont; infrequent in sandy soil of the Coastal Plain: woods, Middle Neck (Ce), *R. R. Tatnall*, 5 May 1929 (T); low ground 1 mi. s. of Choptank Mills (K), *R. R. Tatnall*, 4833, 9 May 1941 (T). May.

Panax L. GINSENG.**P. quinquefolium** L. GINSENG.

Infrequent in rich woodlands of the Brandywine and Red Clay Creek valleys (NC); one collection along the Sassafras River near Fredericktown (Ce), *Mrs. L. R. Holmes*, 6 Aug. 1938, (P). July.

P. trifolium L. DWARF GINSENG.

Frequent in rocky woods of the Piedmont, and occasional along or just south of the Fall Line. Late April to mid-May.

UMBELLIFERAE (PARSLEY FAMILY)

Eryngium L. ERYNGO.**E. aquaticum** L. (*E. virginianum* Lam.) BUTTON SNAKEROOT.

Frequent; ditches, river shores, beaches, dune hollows and swamps of the Coastal Plain, in fresh or brackish habitats. Mid-July, Aug.

Sanicula L. SANICLE.**S. marilandica** L.

Rare, in woodlands: near Wilmington, *Canby*, 23 June 1896, (D); near Centreville (NC), *Commons*, in 1878 and 1898 (A); Choptank Mills (K), *Witmer Stone*, 29 May 1904 (A). Late May to mid-June.

S. gregaria Bicknell.

Frequent in rich woods of the Piedmont province; infrequent on the Coastal Plain as far south as Talbot County, (*Earle*). Mid-May, early June.

S. canadensis L.

Frequent on rich, wooded slopes of the Piedmont; infrequent southward on the Coastal Plain to Cape Charles. Mid-May, mid-June.

Hydrocotyle L. WATER PENNYWORT.

H. umbellata L.

Common throughout the Coastal Plain, in marshes and about pond margins. Early June to mid-Sept. *(not well known)*

H. verticillata Thunberg.

Infrequent on borders of marshes, Coastal Plain. July to Sept.

Var. *triradiata* (Rich.) Fern. (*H. Canbyi* Coulter & Rose.

See Rhodora 41, 437-438. 1939.)

Rare, in salt marshes: Deakyne's Ldg (s. e. NC), *Commons*, 6 July 1874 (A); Chincoteague Island (Ac), M. T. Travis, 658, 21 July 1938 (P).

H. americana L.

Frequent in low, usually alluvial, soil of the Piedmont area; one collection south of the Fall Line: Camp Rodney, Elk Neck (Ce), *Benner*, 25 June 1932 (A). June to Sept.

H. ranunculoides L. f.

Frequent in streamlets, pools and ditches, Piedmont, and southward on the Coastal Plain, at least to Talbot County, (*Earle*). June, July.

H. rotundifolia Roxb.

In lawn grass, Wilmington; thought to have escaped from cultivation in greenhouses.

Centella L.

C. erecta (L. f.) Fern. (*C. asiatica* (L.) Urban; *C. repanda* Small.

See Rhodora 42, 295-298. 1940.)

Infrequent in low, sandy meadows, pine woods and dune sands near the coast, Cape Charles to Sussex County, where it reaches its northern limit. Frt. Sept., Oct.

Chaerophyllum L.**C. procumbens** (L.) Crantz.

Common in rich rocky woods of the Piedmont. Mid-April, early May.

Osmorhiza Raf. SWEET CICELY.

O. Claytoni (Mx.) Clarke. (*O. brevistylis* DC.)

Rare, in rocky woods of the Piedmont: near Rowlandsville (Ce), *Long & Bartram*, 1182, 31 May 1913 (A).

O. longistylis (Torr.) DC.

Common in rich, rocky woods of the Piedmont; rare on the Coastal Plain: 2 mi. s. e. of Cecilton (Ce), *Long*, 48419, 16 May 1936 (A); 5 mi. n. e. of Easton (Ta), *Earle*, 3258, 17 May 1941 (P). May.

Conium L. POISON HEMLOCK.**C. maculatum** L.

Common in meadows along Brandywine Creek (NC), where it appeared in great abundance in June 1935; previously collected a few times in the Piedmont of New Castle County; (see *Bartonia* 17, 23. 1936); rare on the Coastal Plain: Pea Patch Island (NC), *Larsen*, 601, 2 July 1934 (P); meadow $\frac{1}{2}$ mi. s. w. x s. of Easton (Ta), *Earle*, 3988, 1 Oct. 1944 (P). June, early July. Nat. from Europe.

Ptilimnium Raf. MOCK BISHOP'S-WEED.**P. capillaceum** (Mx.) Raf. (*Discopleura capillacea* DC.)

Common throughout the Coastal Plain, in salt meadows and dune hollows, and occasionally found in fresh-water swamps. July through Sept.

Aegopodium L.**A. Podagraria** L. GOUTWEED.

Occasionally found in waste ground, New Castle County. The last known collection was reported from near Newark, by *Commons* in 1882. Adv. from Europe.

Cicuta L. WATER HEMLOCK.**C. maculata** L. SPOTTED COWBANE.

Common throughout, in wet open ground. Mid-June through Aug.

C. Curtissii Coult. & Rose.

One collection: swampy woods s. of Kendall Grove (No), *Fernald, Long & Fogg*, 5397, 13 Oct. 1935 (P).

C. bulbifera L.

One collection: wet ground at top of north bank of C. & D. Canal, w. of Summit Bridge (NC), *Commons*, 24 Aug. 1869 (A).

Sium L. WATER PARSNIP.**S. suave** Walt. (*S. cicutaefolium* Schrank.)

Frequent in low woods, ditches and tidal mud, Piedmont, and southward on the Coastal Plain to northern Accomac County. July through Sept.

Cryptotaenia DC. HONEWORT.**C. canadensis** (L.) DC. (*Deringa canadensis* (L.) Kuntze.)

Common in rich woods of the Piedmont; apparently rare on the Coastal Plain: near Wye Mills (Ta), *R. R. Tatnall*, 372, 28 June 1929 (T); 4 mi. n. e. of Trappe (Ta), *Earle*, 2741, 5 July 1940 (P). Early June to mid-July.

Zizia Koch.**Z. aurea** (L.) Koch. GOLDEN ALEXANDERS.

Frequent in rich woods and meadows of the Piedmont area, Late April to early June.

Z. aptera (Gray) Fern. (*Z. cordata* (Walt.) DC. See *Rhodora* 41, 441-444. 1939.)

Frequent in fields and open woods of the Piedmont. May.

Foeniculum Hill. FENNEL.**F. vulgare** Hill.

An infrequent escape in waste ground, northern New Castle County; common in fields and on roadsides, Accomac and Northampton Counties. Aug., Sept. Introd. from Europe.

Pimpinella L.**P. Saxifraga** L. BURNET SAXIFRAGE.

Rare: in a meadow along the railroad, $\frac{3}{4}$ mi. s. s. w. of Yorklyn (NC), *R. R. Tatnall*, 5140, 16 Sept. 1944 (T, A). Nat. from Europe.

Taenidia Drude.**T. integerrima** (L.) Drude.

Infrequent, in rocky woods of the Piedmont. May, June.

Bupleurum L. THOROUGH-WAX.**B. rotundifolium** L.

One collection: waste ground near 7th Street bridge, Wilmington, *E. Tatnall*, 1 June 1897 (A). Waif from Europe.

Lilaeopsis Greene.

L. chinensis (L.) Ktze. (*L. lineata* (Mx.) Greene.)

Frequent on coastal beaches; usually forming dense mats on salt-marsh peat, just below the level of high tide, and commonly associated with *Scirpus americanus*. On the Delaware Bay shore, its range extends from a point about $\frac{1}{2}$ mile north of the mouth of Red Lion Creek (NC) to $1\frac{1}{2}$ mi. south of Fraland Beach (K), an air-line distance of about 23 miles. (See papers by *J. M. Fogg, Jr.* and *Esther L. Larsen*, in *Bartonia* 16. 1934.) On the Chesapeake side, it is found on the shores of North East and Elk Rivers, and in the estuaries of Chester, Miles and Wicomico Rivers, several miles above their mouths. Late June to mid-August.

Coriandrum L. CORIANDER.

C. sativum L.

Escaped from cultivation in waste ground at Wilmington and Centreville (NC). Adv. from Eurasia.

Aethusa L. FOOL'S PARSLEY.

A. Cynapium L.

In waste places in Wilmington, New Castle and Centreville (NC). Nat. from Europe.

Thaspium Nutt. MEADOW PARSNIP.

T. barbinode (Mx.) Nutt.

Frequent in rich woods bordering the Brandywine and Red Clay Creeks (NC). Mid-May to early July.

Pastinaca L. PARSNIP.

P. sativa L.

Common in open ground, chiefly in the northern part of the Peninsula. Nat. from Europe.

Heracleum L.

H. lanatum Mx. COW PARSNIP.

Common in low ground of the Piedmont; less frequent on the Coastal Plain. May, early June.

Oxypolis Raf.

- O. Canbyi** (Coult. & Rose) Fern. (*O. filiformis* var. *Canbyi* Coulter & Rose. See *Rhodora* 41, 139. 1939.)

Meadows and bogs at Ellendale (S), the only known locality anywhere: *Canby*, Aug. 1867 (A, D), Aug. 1874 (A), Aug. 1893 (D), Aug. 1894 (D); *Commons*, 16 Aug. 1877 (A).

- O. rigidior** (L.) Raf.

Common in swampy ground, Piedmont, and southward to the Virginia line. Aug., Sept.

Angelica L.

- A. venenosa** (Greenway) Fern. (*A. villosa* (Walt.) BSP. See *Rhodora* 45, 298-301, 1943.) HAIRY ANGELICA.

Frequent in rocky woods and dry, sandy soil of Cecil and New Castle Counties; occasional farther south: damp woods near Chop-tank Mills (K), *Otis*, 13 Aug. 1924 (A); woods east of Wattsville (Ac), *R. R. Tatnall*, 4350, 10 Aug. 1939 (T). Mid-July to early August.

- A. atropurpurea** L.

Infrequent in northern New Castle County. May, early June.

Daucus L. CARROT.

- D. Carota** L. WILD CARROT.

Common weed in fields and waste places. July. Nat. from Europe.

CORNACEAE (DOGWOOD FAMILY)

Cornus L. DOGWOOD.

- C. florida** L. FLOWERING DOGWOOD.

Common in dry woods of the Piedmont, and southward to Talbot and Sussex Counties; rare farther south: Cape Charles, s. of Kiptopeke (No), *Fosberg*, 14634 (P). Late April, May.

- C. Amomum** Mill. (*C. sericea* of Gray's Man., ed. 7.) SILKY DOGWOOD.

Frequent along streams and on pond margins of the Piedmont, and on the Coastal Plain southward at least to Sussex and Talbot Counties. June, early July.

C. racemosa Lam. (*C. paniculata* L'Hér. *C. candidissima* Marsh.
See Rehder: *Rhodora* 12, 122. 1910.)

Infrequent in rocky woods and along streams in New Castle and Cecil Counties. June.

C. alternifolia L. f.

Infrequent in low woods and thickets of the Piedmont; occasional southward to Talbot County: e. of Cordova, *Earle*, 20 May 1939 (P). Mid-May, early June.

Nyssa L. BLACK GUM. SOUR GUM.

✓ **N. sylvatica** Marsh.

Common throughout, in low ground, along streams and on borders of salt marshes. Mid-May, early June. *Kentledge*

Var. **biflora** (Walt.) Sarg.

In similar habitats, but less common, Talbot and Sussex Counties and southward.

Var. **dilatata** Fern., in *Rhodora* 37, 436. 1945.

One tree, at the corner of Park Drive and Scott Street, Wilmington. Probably planted.

ERICACEAE (HEATH FAMILY)

Clethra L.

C. alnifolia L. SWEET PEPPERBUSH.

Common in wet thickets throughout the Coastal Plain. Mid-July to mid-Sept.

Chimaphila Pursh.

C. umbellata (L.) Barton var. **cisatlantica** Blake. (*Rhodora* 19, 241. 1917.) PIPSISSEWA.

Rather infrequent throughout, in dry sandy woods. Mid-June, early July.

C. maculata (L.) Pursh. SPOTTED PIPSISSEWA.

Common throughout, in dry rocky or sandy woods. Early June to mid-July.

Pyrola L.

P. secunda L.

One known station: oak-pine woods, 1½ mi. s. e. of Angola (S), *F. C. Schmid, Jr.*, 5 April 1942, with leaves only (A).

P. virens Schweigg. (*P. chlorantha* Sw. of Gray's Man., ed. 7.)

Infrequent, in sandy pine woods, Sussex County. May, early June.

P. elliptica Nutt. SHIN LEAF.

Frequent, in rocky woods of the Piedmont area. Mid-June, early July.

P. rotundifolia L. var. **americana** (Sweet) Fernald. (*P. americana* Sweet, of Gray's Man., ed. 7.)

Frequent in rich woods of the Piedmont; infrequent southward to northern Accomac County: dry sandy woods 1¼ mi. e. of Watts-ville, *R. R. Tatnall*, 4449, 28 April 1940 (T). Mid-June to mid-July.

Monotropa L.

M. uniflora L. INDIAN PIPE.

Frequent in rich woods, Piedmont, and southward on the Coastal Plain to Accomac County. Early June to mid-Sept.

M. Hypopitys L. PINESAP.

Common in rich woods of the Piedmont; infrequent southward to Worcester County. July into September.

Var. **rubra** (Torr.) Farwell. (*M. lanuginosa* Mx.)

Habitat of the species, but less frequent. One station in Northampton County: 1 mi. w. of Eastville, *R. R. Tatnall*, 3211, 18 Oct. 1936 (T).

Rhododendron L.

R. arborescens (Pursh) Torr. (*Azalea arborescens* Pursh). SMOOTH AZALEA.

Rare: Bald Friar (Ce), along the Susquehanna River, *E. B. Bartram*, 4 June 1907 (A), and *S. Brown*, 1 Sept. 1909 (A).

R. viscosum (L.) Torr. (*Azalea viscosa* L.) CLAMMY AZALEA.

Common in swamps and wet thickets, from the Fall Line to Cape Charles. Late May, June.

Var. **glaucum** (Mx.) Gray.

In the same habitats, but less frequent.

R. nudiflorum (L.) Torr. (*Azalea nudiflora* L.) PURPLE AZALEA.

Common in dry or swampy woods, Piedmont area, and southward on the Coastal Plain to Sussex County; infrequent farther

south: Eastville (No). *Fernald & Long*, 5405, 12 Oct. 1935 (P); near Kendall Grove (No), *Fernald, Long & Fogg*, 5406, 15 Oct. 1935 (P). May.

Var. *glandiferum* (Porter) Rehder.

Infrequent, New Castle and Cecil Counties.

R. canescens (Mx.) G. Don. (*Azalea canescens* Mx.)

Infrequent, New Castle and Cecil Counties; one collection from Sussex County: Millsboro, *S. Brown*, 21 Sept. 1907 (A). May, June.

R. atlanticum (Ashe) Rehder. (*Azalea atlantica* Ashe.) See Wilson & Rehder: Monograph of Azaleas; Publ. Arnold Arboretum, No. 9 (1921).

Frequent in sandy woods or open sandy ground of the Coastal Plain; known from Cecil, New Castle, Kent (Del.), Caroline, Talbot, Sussex and Somerset Counties. Fls. from about 10 May to 3 June.

A southern species, reaching the northern limit of its range near the Fall Line.

R. maximum L. GREAT LAUREL.

Rare: reported by *Miss Mary R. de Vou* to have been found at Egg Hill (Ce), $\frac{3}{4}$ mi. s. of Pleasant Hill, 28 June 1913; about 2 mi. e. of Conowingo (Ce), *Frank Morton Jones*. No specimens seen.

Kalmia L. LAUREL.

K. angustifolia L. SHEEP LAUREL.

Infrequent, in sandy soil of the Coastal Plain in Cecil and New Castle Counties, chiefly near the Fall Line; occasional farther south: Frankford (S), *Commons*, 18 June 1875 (A); Bethel (S), *R. R. Tattall*, 1403, 30 May 1932 (T). Fls. late May, early June, and exceptionally to early November.

K. latifolia L. MOUNTAIN LAUREL.

Frequent in the Piedmont and northern part of the Coastal Plain; occasional southward to Talbot and Sussex Counties: 4 mi. n. w. of Easton (Ta), *Earle*, 810, 11 April 1936 (P); Selbyville (S), *W. R. Haden* in 1927 (UD). Late May, June.

Var. *laevipes* Fern., in *Rhodora* 42, 53. 1940.

Rare, in dry woods of central Cecil County: near North East, *Long*, 54428, 30 May 1940 (A); s. w. of Charlestown, *Long*, 54341, 26 May 1940 (A).

Leucothoe G. Don.

✓ *L. racemosa* (L.) Gray. FETTER BUSH.

Common in wet thickets, throughout the Coastal Plain. Early May, June. *Sussex, Maryland*

Lyonia Nutt.*L. mariana* (L.) D. Don. STAGGER BUSH.

Frequent in thickets and on open ground of the Coastal Plain, from the Fall Line southward to Sussex County; rare farther south: Drummonds Ponds, n. w. of Accomac, *R. R. Tatnall*, 4217, 9 June 1939 (T). Late May, June.

L. ligustrina (L.) DC.

Common in moist thickets, Piedmont, and Coastal Plain southward to Worcester County; scarce farther south: $\frac{3}{4}$ mi. n. of Belle Haven (Ac), *R. R. Tatnall*, 2648, 3 June 1935 (T, P). Early June to early July.

Chamaedaphne Moench.*C. calyculata* (L.) Moench. LEATHER LEAF.

Bogs; first collected at Thompson's Swamp, $1\frac{1}{2}$ mi. n. w. of New Castle, by *Canby* in 1858 (D); Frankford (S), *Commons* in 1875 (A); Townsend (NC), *Commons* in 1890 (A). Reported (*E. Tatnall*, MS. Catalog) as "abundant near Townsend," but not recently found within our limits, in spite of careful search. April, early May.

Oxydendrum DC.*O. arboreum* (L.) DC. SORREL TREE.

Common in woods, southern Accomac and northern Northampton Counties. May, early June.

Epigaea L.*E. repens* L. TRAILING ARBUTUS.

Frequent in rocky woods of the Piedmont, and in sandy woods of the Coastal Plain, southward to Talbot and Sussex Counties; one station in northern Accomac County: $\frac{1}{2}$ mi. e. of Wattsville, *A. V. Smith & R. R. Tatnall*, 4448, 28 April 1940 (T). April, early May.

Gaultheria L.*G. procumbens* L. WINTERGREEN. TEABERRY.

Infrequent in the Piedmont of New Castle County; frequent

among pines in Sussex, Caroline, Wicomico and Worcester Counties. Mid-June, early July.

Gaylussacia HBK. HUCKLEBERRIES.

G. brachycera (Mx.) Gray. BOX HUCKLEBERRY.

Rare; Sussex County. This plant, first collected by Michaux in Virginia (?) prior to 1800, was soon thereafter lost to botanical knowledge for about forty years, when another station was discovered for it in Perry County, Pennsylvania. Here, as studied by Coville in 1918 ("Science," Vol. 50:30. 1919), it was found to occupy a continuous area of about eight acres; was considered to be represented by a single plant, almost completely infertile to its own pollen; to be of slow annual growth, sprung from a seed germinating perhaps 1200 years previously, hence among the oldest of living things. Thus a botanical celebrity, search was made for other authenticated occurrences of the species, and from herbarium specimens it was learned that William M. Canby had collected it ("shores of Indian River") in Sussex County, Delaware, May 1870 (P, A), and that this station, in pine woods 1½ mi. e. of Millsboro, had been visited by Commons in 1875, 1876, 1877. It was then again lost, for in the autumn of 1898 Canby undertook to show it to his friends, Dr. C. S. Sargent and John Muir, and they "passed a long day hunting for it without success in southern Delaware. He (Canby) was, I remember, a good deal chagrined at his failure to show us the plant and we always teased him about it" (unpublished letter, C. S. Sargent to H. M. Canby, June 8, 1920).

In 1918 a botanist sent by Dr. Coville spent two days in unavailing search for the plant, in the Canby locality, where however it was found by Dr. Wherry in 1919 after a search of three days. Living plants taken to Washington for cross-pollination with Pennsylvania material resulted in seeds fully fertile, thus confirming the individuality of its representation in these two isolated stations, then its only known habitats. Its known distribution has since been greatly expanded, and Wherry ("Bull. Torrey Bot. Club," 61: 81-84. 1934) records it from seven States. With these historic associations, members of the Society of Natural History of Delaware felt that full knowledge of the occurrence of this plant in Delaware should be entered in the archives of the Society, and on May 31, 1920, four members of the Society (H. M. Canby, Otis Harvey, F. M. Jones), with the available data from the original

Canby labels, made search for it in the indicated area. Here it was found within a few minutes, by H. M. Canby, and material was collected for planting elsewhere and for preservation.

When the writer first visited this locality, in 1926, under guidance of Dr. Frank Morton Jones, the stand measured perhaps 10 by 30 feet, and was rather thinly populated. Later, many pines were cut down, and the Box Huckleberry gradually disappeared, so that on a visit to the spot about 1939 not a trace of it could be found.

A much more extensive station was discovered in July 1932 by W. S. Taber, Delaware state forester, on the wooded south bank of Broad Creek, 1 mi. w. n. w. of Portsville, and 0.3 mi. below Bailey's Landing. Here there is a dense growth of Box Huckleberry on the steep bank and adjoining level ground, 10 to 50 feet wide, and extending about half a mile along the creek, though interrupted by two or three gullies. Distributed from this station by R. R. Tattall, 2154, 3 June 1934 (T, P, A, G); 3677, 30 April 1938 (T); 3680, 7 May 1938 (T). Fls. late April, mid-May.

G. dumosa (Andr.) T. & G. DWARF HUCKLEBERRY.

Infrequent; dry sandy soil or sandy swamps on the Coastal Plain of New Castle and Sussex Counties. Late May, June.

Var. **Bigeloviana** Fern.

Rare: Kiamensi (NC), *Commons* in 1894 (A); Seaford (S), *Commons* in 1896 (A).

G. frondosa (L.) T. & G. BLUE TANGLE.

Frequent in dry or moist woods and thickets, Piedmont and Coastal Plain of Cecil and New Castle Counties; occasional farther south: near Cape Henlopen (S), *Commons*, 14 July 1898 (A); Long Point (Ta), 5 mi. w. of Easton, Earle, 1460, 30 May 1937 (P). Late May, June.

G. baccata (Wang.) C. Koch. BLACK HUCKLEBERRY.

Common in dry or swampy woods, and on open sandy soil, Piedmont, and Coastal Plain southward at least to Talbot and Sussex Counties. Early May, mid-June.

Vaccinium L. BLUEBERRIES. CRANBERRIES.

V. stamineum L. DEEBERRY.

Common in dry woods and open places on the Coastal Plain, from the Fall Line southward to Worcester County; rare in the

Piedmont: near Centreville (NC), *Commons* in 1878 (A). May, early June.

V. neglectum (Small) Fern.

Common in dry sandy woods of the Coastal Plain. May.

V. angustifolium Ait. (*V. pennsylvanicum* Lam.) LOW SWEET BLUEBERRY.

Infrequent, in rocky or sandy woods of New Castle County. Fl. late April, mid-May; Frt. late June, July.

V. vacillans Kalm. LOW BLUEBERRY.

Common in rocky woods and dry sandy soil in the two northern counties; less frequent southward to Sussex and Talbot Counties; rare south of the Maryland-Virginia line: 3 mi. s. of Accomac, *Fosberg*, 14613, 18 April 1938 (P); s. of Kiptopeke (No), *Fosberg*, 14632, 18 April 1938 (P). Fl. May; Frt. late June, July.

Var. **crinitum** Fern. See *Rhodora* 13, 236. 1911.

Rare: 2 mi. s. e. of North East (Ce), *Long*, 54396, 30 May 1940 (A).

V. corymbosum L. HIGH BLUEBERRY.

Common throughout, in low woods and dry open places. Fl. mid-April, mid-May; Frt. July, Aug.

V. atrococcum (Gray) Heller. BLACK BLUEBERRY.

Frequent in moist thickets and low woods, Piedmont, and southward on the Coastal Plain to Worcester and Somerset Counties. Fl. late April, mid-May; Frt. July.

V. caesariense Mack. NEW JERSEY BLUEBERRY.

One known station: pine barrens 2 mi. n. e. of Charlestown (Ce), *F. J. Hermann*, 3407, 7 July 1932 (A).

V. macrocarpon Ait. LARGE CRANBERRY.

Infrequent in swamps, brackish meadows, and ponds in pine woods of the Coastal Plain, near Wilmington, along the seashore in Sussex County, and probably elsewhere. Fl. mid-June to mid-July; Frt. late Aug., Sept.

PLUMBAGINACEAE (LEADWORT FAMILY)

Limonium Hill.

✓ *L. carolinianum* (Walt.) Britton. SEA LAVENDER.

Common in salt meadows, southeastern New Castle County, and southward to Cape Charles. Late July into Sept. *Sussex*

L. Nashii Small var. *trichogonum* Blake.

Rare: border of salt marsh e. of Eastville (No), *Fernald & Long*, 5404.

PRIMULACEAE (PRIMROSE FAMILY)

Hottonia L.

H. inflata Ell. FEATHERFOIL.

Infrequently collected, but probably much more common than has been supposed, in shallow water of ponds and slow streams on the Coastal Plain. Known from New Castle, Kent (Del.), Caroline and Sussex Counties.

First collected in our area by *Edward Tatnall*, who found a single plant in a pond near Ogletown (NC) in 1840 (D). The next and subsequent collections are: Choptank Millpond (Ca), *Frank M. Jones*, 22 May 1922 (A, D); upper end of Silver Lake, Dover (K), *F. M. Jones* and *R. R. Tatnall*, 914, 15 June 1930 (A, T, G); Wyoming Pond (K), *H. R. Baker*, 17 June 1923 (UD); in Round Pole Branch, 2¼ mi. s. of Milton (S), *R. R. Tatnall*, 3245, 11 April 1937, and several later collections (T, A, P, G); in Choptank Pond (Ca), *Julian V. Hill*, 4 May 1941 (T). Flowers appear normally in April and May; occasionally as late as November on young plants which have germinated in late summer. These sometimes bloom sparingly in the autumn, then, after surviving as winter annuals, burst into full bloom in early spring.

Samolus L.

S. parviflorus Raf. (*S. floribundus* HBK. See Weatherby & Griscom: *Rhodora* 36, 50. 1934.) WATER PIMPERNEL.

Common on fresh or salt tidal shores of the Coastal Plain. Late May through the summer.

Lysimachia L. LOOSESTRIFE.

L. vulgaris L.

Rare, on banks of the Susquehanna River: Conowingo (Ce),



FEATHERFOIL, (*Hottonia inflata*)

The finely dissected floating foliage and inflated flower-stalks combine to give this plant unique interest and beauty.

E. B. Bartram, 4 July 1907 (A); near Rowlandsville (Ce), *L. F. A. Tanger*, 4625, 11 Aug. 1941 (A). Nat. from Europe.

L. quadrifolia L. WHORLED LOOSESTRIFE.

Common in sandy soil; roadsides and clearings, New Castle and Cecil Counties; less frequent southward: woods s. w. of Unionville (Ta), *Earle*, 3693, 1 Aug. 1942 (A). June.

L. terrestris (L.) BSP. (*L. stricta* Ait.) BULB-BEARING LOOSESTRIFE.

Frequent; swamps and margins of streams, Piedmont, and Coastal Plain southward at least to Sussex County. Mid-June, July.

In autumn, the plant usually bears jointed bulblets in the axils.

× L. producta (Gray) Fern. (*L. quadrifolia* × *terrestris*, probably.)

One collection: Georgetown (S), *Williamson*, 4 July 1908 (A).

L. Nummularia L. MONEYWORT.

A frequent escape from cultivation. June. Introd. from Europe.

L. ciliata L. (*Steironema ciliatum* (L.) Raf.)

Frequent in wet ground, northern New Castle and Cecil Counties; rare southward: n. e. of Trappe (Ta), *Earle*, 2746, 5 July 1940 (A). Early June, July.

L. lanceolata Walt. (*S. lanceolatum* (Walt.) Gray.)

One collection: Conowingo (Ce), islands in the Susquehanna River, *J. Crawford*, 27 July 1924 (A). This station is now submerged.

L. hybrida Mx. (*Steironema lanceolatum* var. *hybridum* of Gray's Man., ed. 7.)

Frequent in the Coastal Plain area of New Castle County; one station in Wicomico County: tidal flats, Salisbury, *Wherry*, 4 Sept. 1925 (A). July, Aug.

Trientalis L.

T. borealis Raf. (*T. americana* (Pers.) Pursh.) CHICKWEED WINTERGREEN. STAR FLOWER.

Rare, in Sussex County: cedar swamps, Millsboro, *Commons* in 1876 (A, U); bank of streamlet along "seven-gates-road," 2 mi. n. w.

of Rehoboth, *F. M. Jones & R. R. Tatnall*, 1828, 29 May 1933 (T, P, G). May, early June.

Glaux L.

G. maritima L. SEA MILKWORT.

Rare: between tides on both shores of Chester River, below Chestertown: (QA), *E. G. Vanatta* in 1903 and 1905 (A); (Ke), *Vanatta*, 2 July 1906 (A); south shore of river (QA), 1 mile below Chestertown bridge, *R. R. Tatnall*, 1631, 5 Sept. 1932 (T, G), and 3105, 21 Aug. 1936 (T, G).

Anagallis L. PIMPERNEL.

A. arvensis L. POOR MAN'S WEATHER-GLASS.

Frequent in cultivated and waste ground, and on borders of salt marshes, Piedmont, and Coastal Plain southward to Worcester and Somerset Counties. June to Sept. Introd. from Eurasia.

Centunculus L.

C. minimus L.

One collection: "near Lewiston" (S), *Canby*, June 1866 (D, US).

EBENACEAE (EBONY FAMILY)

Diospyros L.

D. virginiana L. PERSIMMON.

Common throughout, in sandy fields and hedgerows, and on coastal dunes and beaches. Fl. late May, mid-June; Frt. Oct., Nov.

STYRACACEAE (STORAX FAMILY)

Symplocos Jacq.

S. tinctoria (L.) L'Hér. SWEET LEAF.

Infrequent, in rich dry or swampy ground, southern Sussex and northeastern Wicomico Counties, in and near the "Great Cedar Swamp," where first reported by *Nuttall* in 1809. May.

OLEACEAE (OLIVE FAMILY)

Fraxinus L. ASH.

F. americana L. WHITE ASH.

Frequent in the Piedmont area; probably frequent, but seldom



SWEET LEAF, (*Symplocos tinctoria*)

This attractive small tree reaches its northern limit in Sussex County, Delaware. In 1885, Dr. C. S. Sargent wrote to William M. Canby for fresh material from which to illustrate it in his sumptuous "Silva of North America."

Fraxinus OLEACEAE—LOGANIACEAE *Polypremum*

collected, on the Coastal Plain: along Miles River, n. w. of Easton (Ta), Earle, 1741, in 1938 (P). May.

F. pennsylvanica Marsh. RED ASH.

Frequent in low ground near the Fall Line, becoming less common southward. May.

F. lanceolata Borkh. (*F. viridis* Mx. f. *F. pennsylvanica* var. *lanceolata* of Gray's Man., ed. 7.) GREEN ASH.

Frequent along the Brandywine and Red Clay Creeks (NC); also Sussex County: along the Nanticoke River, s. w. of Seaford, Earle, 1802, in 1938 (P). May.

F. nigra Marsh. BLACK ASH.

Infrequent, in low ground, northern New Castle County, and southern Cecil County.

Chionanthus L.

C. virginica L. FRINGE TREE.

Frequent in moist woods of the Coastal Plain, from the Fall Line southward to Worcester County; occasional in the Piedmont area: rocky banks of the Brandywine Creek above Wilmington, Canby in 1897 (D); near Rowlandsville (Ce), Long & Bartram, 1197, 31 May 1913 (A). Mid-May, early June.

Ligustrum L.

L. vulgare L. PRIVET.

An infrequent escape from cultivation in northern New Castle County. June. Introd. from Europe.

LOGANIACEAE (LOGANIA FAMILY)

Gelsemium JUSS.

G. sempervirens (L.) Ait. f. YELLOW JESSAMINE.

Rare: in moist sandy woods back of dunes, s. w. of Eastville (No), Fernald, Long & Fogg, 5411, in 1935 (P, G). April.

Polypremum L.

P. procumbens L.

Frequent in dry sandy fields and open woods, from Cape Charles northward to lower Kent (Del.) and Talbot Counties. Late July to Sept.

GENTIANACEAE (GENTIAN FAMILY)

Sabatia Adans. CENTAURY.

S. difformis (L.) Druce. (*S. lanceolata* (Walt.) T. & G.)

Infrequent, in swamps and meadows of Sussex and Dorchester Counties. Late July to early Sept.

S. angularis (L.) Pursh. SQUARE-STEMMED CENTAURY.

In low ground throughout the Peninsula, preferring inland situations; frequent in the northern half; less so southward. Aug. to early Oct.

S. stellaris Pursh. SEA PINK.

Common on beaches, and in brackish or salt marshes of the Coastal Plain. Late July to mid-Oct.

S. campanulata (L.) Torr. (Incl. var. *gracilis* (Mx.) Fern. See Rhodora 39, 443-444. 1937.)

Infrequent in meadows and salt marshes, southern New Castle to northern Accomac Counties. Aug., early Sept.

S. dodecandra (L.) BSP. LARGE MARSH CENTAURY.

Frequent in brackish meadows and on tidal shores, from the Fall Line southward to Worcester and Wicomico Counties. Early Aug. to early Sept.

Centaurium Hill.

C. spicatum (L.) Fern.

One station: Blackwater Migratory Waterfowl Refuge (Do), 1 mi. n. of Shorters Landing, on shoulders of an oyster-shell-paved causeway (*Neil Hotchkiss*), *R. R. Tatnall*, 4589, 2 Aug. 1940 (T, P, A, G). Nat. from Europe.

C. pulchellum (Sw.) Druce. (*Erythraea ramosissima* Pers.) CENTAURY.

Rare in sandy soil of the Coastal Plain: north of Ocean View (S), *Commons*, 10 Sept. 1875 (A); "fields and wastes" (Ac), *Ellis Mears*, 17 July 1882 (A); meadows, Ocean City (Wo), *Canby*, 23 July 1893 (D); 4 mi. w. n. w. of Easton (Ta), *Earle*, 1769, 5 Aug. 1938 (P). Nat. from Europe.

Gentiana L. GENTIAN.

G. crinita Froel. FRINGED GENTIAN.

Rare, New Castle County: near Centreville (NC), *Commons* in

1865 and 1878 (A); Faulkland, *R. R. Tatnall*, 24 Sept. 1886 (T); near Southwood, *Canby*, Oct. 1894 (D); Brandywine Springs, *Canby*, 8 Oct. 1896 (D); roadside bank 1 mi. w. of Centreville, *R. R. Tatnall*, 221, 12 Oct. 1928 (T, P). Now extinct in most or all of the above localities. Mid-Sept. into Oct.

G. Saponaria L. SOAPWORT GENTIAN.

Frequent in low ground of the Coastal Plain as far south as Worcester County. Sept. to early Nov.

G. Catesbaei Walt. (*G. parvifolia* (Chapm.) Britton. See *Rhodora* 41, 555. 1939.)

Infrequent, in low woods and thickets, Northampton County and northward to Ellendale (S). Mid-Sept., mid-Oct.

G. Andrewsii Griseb. CLOSED GENTIAN.

Infrequent, in meadows of the Piedmont area; rare on the Coastal Plain: 3 mi. n. w. of Rehoboth (S), *R. R. Tatnall*, 3226, 19 Oct. 1936 (T). Mid-Sept., mid-Oct.

G. clausa Raf.

One known station: Rock Springs (Ce), *J. J. Carter*, 11 Sept. 1906 (A).

G. villosa L. (*G. ochroleuca* Froel.) STRIPED GENTIAN.

Rare, in woods of the Piedmont province: near Centreville (NC), *Commons*, in 1875 to 1878 (A); North East (Ce), *J. Crawford*, 2 Oct. 1894 (A).

G. Porphyrio Gmel. PINE BARREN GENTIAN.

One collection: "Pine barrens, Sussex County," *Commons*, 10 Sept. 1875 (A).

Bartonia Muhl.

B. virginica (L.) BSP.

Frequent throughout, in sandy woods and wet thickets. Aug., mid-Sept.

B. paniculata (Mx.) Robinson.

Infrequent, in low woods of the Coastal Plain, chiefly in Sussex County; occasionally as far north as the Fall Line; also in Virginia: near Wilmington (NC), *Commons*, 16 Sept. 1899 (A); Custis Ponds s. w. of Eastville (No), *R. R. Tatnall*, 3610, 3 Oct. 1937 (T). Mid-Sept., early Oct.

Obolaria L. PENNYWORT.

O. virginica L.

Frequent in woods of the Piedmont, and of southern Cecil County; rare farther south: woods 6 mi. n. e. of Easton (Ta), *Earle*, 2462, 1 June 1940 (P); east of Wattsville (Ac) (*A. V. Smith*), *R. R. Tatnall*, 4442, 28 April 1940 (T, G); reported as abundant under a tulip-tree, 1 mi. n. e. of Silva (Ac), *A. V. Smith*, May 1943. Mid-April, mid-May.

Menyanthes L. BUCKBEAN.

M. trifoliata L.

Formerly rare in swamps of New Castle County: Thompson's Swamp, n. w. of New Castle, *E. Tatnall* in 1840 (D); Cedar Swamp, *Commons* in 1866, according to *E. Tatnall* (MS Catalog). Now probably extinct in our area.

Nymphoides Hill. FLOATING HEART.

N. cordatum (Ell.) Fern. (*N. lacunosum* (Vent.) Fern; *Limnanthemum lacunosum* Griseb. See *Rhodora* 40, 338. 1938.)

Infrequent, on ponds, from central Kent (Del.) County to Wicomico County. July, Aug.

N. aquaticum (Walt.) Fern.

On ponds; frequent in Sussex and Wicomico Counties; rare farther north and south: Wyoming Pond (K), *H. R. Baker*, 17 June 1923 (UD); millpond, Wattsville (Ac), *True*, 29 June 1928 (P); Drummond's Ponds, n. w. of Accomac, *R. R. Tatnall*, 4229, 9 June 1939 (T). Early June to late July.

APOCYNACEAE (DOGBANE FAMILY)

Vinca L. MYRTLE.

V. minor L. PERIWINKLE.

Frequently escaping and becoming established. Introd. from Europe.

Trachelospermum Lemaire.

T. difforme (Walt.) Gray. CLIMBING DOGBANE.

Rare: near Collins Beach (NC), moist thicket bordering the Cedar Swamp, *Commons* in 1865, 1867, 1874 (A); Townsend (NC), moist soil along a rivulet in woods, *Commons*, 9 July 1884 (A).

Apocynum L. DOGBANE.

✓ **A. androsaemifolium L. SPREADING DOGBANE.**

Infrequent, in dry ground, Piedmont and Coastal Plain areas of New Castle County. Mid-June, July. *Early June.*

A. cannabinum L. HEMP DOGBANE.

Common throughout, at least as far south as Accomac County, preferring sandy soil. Late May, June.

Var. **pubescens** (R. Br.) DC.

Frequent; same habitats, but apparently limited to the Coastal Plain.

Var. **glaberrimum** A. DC.

One collection: roadside thicket, just south of Sassafras (Ke), *R. R. Tatnall*, 4899, 23 July 1941 (T, G).

Var. **hypericifolium** (Ait.) Gray.

Reported (in MS Catalog) as collected by *E. Tatnall* at Hamburg Cove (NC), and at Edgemoor (NC), in 1894. No specimens seen.

✓ **A. medium** Greene.

Rare: near Centreville (NC), *Commons* in 1876 (A); fields, Wilmington, *Commons*, 18 June 1897 (A); Rehoboth (S), *C. S. Williamson*, 8 July 1908 (A). *New York*

Perhaps a hybrid, *A. androsaemifolium* × *A. cannabinum*.

A. sibiricum Jacq.

Infrequent, on shores of Delaware River (NC), and Susquehanna River (Ce).

Var. **sarniense** (Greene) Woodson.

One collection: in bed of Susquehanna River, Conowingo (Ce), *Pennell*, 1573, 1 July 1914 (A). Locality now submerged.

ASCLEPIADACEAE (MILKWEED FAMILY)

Asclepias L. MILKWEED.

✓ **A. tuberosa L. BUTTERFLY-WEED.**

Common in dry soil of the Piedmont, and southward on the Coastal Plain, at least to Wicomico County. July, early Aug. *June 11*

A. lanceolata Walt. ORANGE MILKWEED.

Frequent on beaches and in salt marshes, Kent (Del.), Sussex and Worcester Counties. Late June, July.

Var. **paupercula** (Mx.) Fern.

Rare: salt meadow, Fenwick Island (S), *R. R. Tatnall*, 2278, 22 July 1934 (T, G), and 2383, 16 Sept. 1934 (T). July. Range extension northward from s. e. Virginia.

A. rubra L. RED MILKWEED.

Infrequent, in all three counties of Delaware. July.

A. purpurascens L. PURPLE MILKWEED.

Frequent in dry woods and fields, and on roadsides, Piedmont and northern portion of Coastal Plain, in New Castle and Cecil Counties. June, mid-July.

A. incarnata L. SWAMP MILKWEED.

Infrequent, in swamps of the Piedmont and Coastal Plain southward at least to Talbot County (*Earle*); one station in Accomac County: Wallops Island, *McAtee* in 1913 (U). Early June to mid-Aug.

Var. **pulchra** (Ehrh.) Pers.

Common in swamps, Piedmont, and southward on the Coastal Plain to northern Accomac County. June to Aug.

A. syriaca L. (*A. Cornuti* Dcne.) COMMON MILKWEED.

Common in dry ground; fields and roadsides, Piedmont and Coastal Plain. June, July.

A. amplexicaulis Sm. (*A. obtusifolia* Mx.)

Frequent in dry sandy soil, from the Fall Line southward to Accomac County. June.

A. phytolaccoides Pursh. (*A. exaltata* of authors.) POKE MILKWEED.

Frequent in moist thickets, northern New Castle County. Mid-June, July.

A. variegata L. WHITE MILKWEED.

Frequent in dry open woods and open sandy soil, Piedmont, and southward on the Coastal Plain to central Accomac County. Late May, June.

Asclepias ASCLEPIADACEAE—CONVOLVULACEAE *Ipomoea*

A. quadrifolia Jacq.

Infrequent, in dry hilly woods of the Piedmont; rare on the Coastal Plain: woods 2½ mi. n. e. of Cecilton (Ce), *R. R. Tatnall*, 4851, 21 May 1941 (T). Late May, mid-June.

A. verticillata L. WHORLED MILKWEED.

Infrequent; on serpentine soil of New Castle and Cecil Counties, and on sandy banks southward to Worcester County. Mid-July, Aug.

Acerates Ell.

A. longifolia (Mx.) Ell. (*A. floridana* (Lam.) Hitchc. See Fernald: *Rhodora* 46, 488-489. 1944.)

Very rare; known only from upland meadows and ditches at Ellendale (S). First collected by *Commons & Canby*, in ditches along the railroad, south of the village, in 1877 (A); in same locality, by *Long & Bartram* in 1913 (A); *R. R. Tatnall*, 23 July 1926 (T), and 2175, 9 June 1934 (G); *H. R. Baker*, 20 June 1931 (UD). Now apparently extinct in our area.

A. viridiflora (Raf.) Eaton. GREEN MILKWEED.

Frequent on sandy soil, including serpentine, in the Piedmont area of New Castle and Cecil Counties; occasional on the Coastal Plain: Chestertown (Ke), *E. G. Vanatta*, 9 Aug. 1900 (A); Middletown (NC), *E. B. Bartram*, 16 Aug. 1908 (A). Late June to mid-Aug.

Gonolobus Mx.

G. carolinensis (Jacq.) Schult. (*G. hirsutus* Mx.; *Vincetoxicum carolinense* (Jacq.) Britton. See Perry: *Rhodora* 40, 285-286. 1938.) ANGLE-POD.

Infrequent, in thickets, or climbing on fences, in southern New Castle, Cecil, Kent (Del. and Md.), and Queen Anne's Counties. Early June to mid-Sept.

CONVOLVULACEAE (MORNING GLORY FAMILY)

Ipomoea L. MORNING GLORY.

I. coccinea L. (*Quamoclit coccinea* (L.) Moench.)

A frequent escape in cultivated and waste ground. July to Oct. Nat. from tropical America.

I. hederacea Jacq. IVY-LEAVED MORNING GLORY.

Infrequent throughout; fields, roadsides and low ground. Mid-Aug. to mid-Oct. Adv. from tropical America.

I. purpurea (L.) Roth. COMMON MORNING GLORY.

Frequently escaped from gardens, and established in fields and waste places. July to Sept. Introd. from tropical America.

I. pandurata (L.) Meyer. MAN-OF-THE-EARTH.

Frequent in dry sandy soil, Piedmont, and Coastal Plain southward at least to Worcester County. July to mid-Sept.

I. lacunosa L.

Infrequent, in cultivated ground, hedgerows and meadows of the Coastal Plain; one station in the Piedmont: shores of Susquehanna River at Bald Friar (Ce), *Van Pelt*, 1 Sept. 1909 (A). Aug., mid-Sept.

Convolvulus L. BINDWEED.**C. spithameus** L. UPRIGHT OR DWARF MORNING GLORY.

Infrequent; sandy banks and fields, New Castle County. Mid-May, early June.

C. sepium L. var. **communis** Tryon. (See Tryon: *Rhodora* 41, 418-420. 1939.)

Frequent along streams, and especially on borders of salt marshes along the coast; rare in the Piedmont area: Conowingo (Ce), *E. B. Bartram*, 4 July 1907 (A). June through Aug. "This is the common plant throughout the northeastern U. S." (Tryon, l. c.).

Var. **americanus** Sims. (Var. *pubescens* of Gray's Man., ed. 7.)

Rare; brackish shores and salt marshes: Oak Orchard (S), *Fernald & Long*, 4148, in 1934 (P); 3 mi. n. of Bethany Beach (S), *Fogg*, 11354, 29 Aug. 1936 (P). *Sussex Co.*

C. arvensis L. FIELD BINDWEED.

Frequent in upland New Castle County; one collection in Talbot County: 4 mi. w. n. w. of Easton, *Earle*, 3043, 3 Sept. 1940 (P). July to Oct.

E. Tatnall (Catalogue, 1860), mentions this species as "Rare. Detected by W. M. Canby, June 1860." Now a troublesome weed.

Cuscuta L. DODDER.

C. Epilinum Weihe. FLAX DODDER.

Rare, in grain fields: Centreville (NC), *Commons*, 13 July 1863 (A); "New Castle County," *Commons* in 1865 (A). Introd. from Europe.

C. Polygonorum Engelm. (*C. obtusiflora* HBK.)

Rare: Salisbury (Wi), *Canby* in 1863 (D); near Wilmington, *Canby*, n. d. (A); river shore below New Castle, *E. Tatnall*, 13 July 1894 (D).

C. pentagona Engelm. (*C. arvensis* Beyrich.)

Infrequent, New Castle and Sussex Counties. Mid-July into Sept.

C. campestris Yuncker. (*C. pentagona* var. *calycina* Engelm.)

Reported as "in dense colonies in field of *Lespedeza stipulacea*, Willards, Wicomico County," by *Moldenke*, 13847, in *Castanea* 7, 123. 1942. No specimen seen.

C. Coryli Engelm. HAZEL DODDER.

One collection: beach of south bank of Chester River (QA), 1 mi. below Chestertown bridge, *R. R. Tatnall*, 3107, 21 Aug. 1936 (T).

C. Gronovii Willd.

Common; Piedmont and Coastal Plain. Aug., Sept.

C. compacta Juss.

Frequent; northern New Castle County, and southward to Wicomico County. Aug., early Sept.

POLEMONIACEAE (PHLOX FAMILY)

Phlox L.

P. paniculata L.

Infrequent, in woods along the Susquehanna River. Collections in Delaware (New Castle and Sussex Counties), probably represent escapes from cultivation. July to early Oct.

P. maculata L. WILD SWEET WILLIAM.

Frequent in low ground, Cecil, New Castle and Kent (Del.) Counties. Mid-May to early July.

Phlox POLEMONIAC.—HYDROPHYLLAC. *Hydrophyllum*

P. divaricata L. BLUE PHLOX.

Frequent on rich wooded slopes, or occasionally in open ground along the Susquehanna River and Octoraro Creek, in western Cecil County; escaped from cultivation near Wilmington. Mid-April, May.

P. pilosa L. DOWNY PHLOX.

Rare, in New Castle County: woods near Centreville, *Commons*, June 1863 (A); serpentine barrens near Centreville, *Commons*, 5 June 1874. No other collections are known.

P. subulata L. MOSS PHLOX. "MOSS PINK."

Known in our territory only on serpentine soil of Cecil County: along Octoraro Creek, 1 mi. n. w. of Octoraro, *Long*, 32225, 3 May 1925 (A); Octoraro Creek, just south of Pennsylvania line, *Wherry*, 4 May 1930 (A); Bald Friar, *Long*, 42975, 6 May 1934 (A). Late April, May.

Ipomopsis Mx.

I. rubra (L.) Wherry. (*Gilia rubra* Heller; *G. coronopifolia* Pers. See *Bartonia* 18, 56. 1936.) STANDING CYPRESS.

Infrequent, in dry sandy soil; cultivated, and sometimes persisting on sites of old dwellings long after the buildings have disappeared; southern Sussex County, and at Sharptown (Wi). Mid-June to early Sept.

Polemonium L. JACOB'S LADDER.

P. reptans L.

Frequent in northern New Castle County; one station in Talbot County: Windmill Branch, 1½ mi. s. of Easton, *Earle*, 1402, 9 May 1937 (P). Late April, mid-May.

HYDROPHYLLACEAE (WATERLEAF FAMILY)

Hydrophyllum L. WATERLEAF.

H. virginianum L.

Frequent in rich woods of the Piedmont; less so in the northern part of the Coastal Plain. Late April, May.

H. canadense L.

Rare; in moist rocky woods along the Susquehanna River: Conowingo (Ce), *Long*, 21 April 1909 (A); *Fogg*, 1915, 15 May 1927 (P).

Ellisia L.

E. Nyctelea L.

Rare, in woods along the Susquehanna River: Bald Friar (Ce), *J. J. Carter*, 16 May 1908 (A); *Fogg*, 1899, 14 May 1927 (P).

Phacelia Juss.

P. dubia (L.) Small.

Infrequent along the Susquehanna River; rare in New Castle County: ditch bank, $\frac{1}{4}$ mi. s. w. of Ogletown, on road to Wilson, *C. O. & F. C. Houghton*, 11 May 1935 (UD); *R. R. Tatnall*, 3295, 13 May 1935 (T, A, P, G); on the same road, $1\frac{1}{2}$ mi. w. of Ogletown, *R. R. Tatnall*, 5082, 4 May 1944 (T). Late April, mid-May.

BORAGINACEAE (HELIOTROPE FAMILY)

Heliotropium L. WILD HELIOTROPE.

H. europaeum L.

Rare, in waste ground: Greenbank (NC), *Commons*, 3 July 1881 (A); Sharptown (Wi), *Otis*, in 1914 (D); shore of Nanticoke River, at east end of Vienna bridge (Wi), *R. R. Tatnall*, 4576, 2 Aug. 1940 (T). Adv. from Europe.

H. curassavicum L. SEASIDE HELIOTROPE.

Rare, in brackish sand: shore of Delaware Bay, at Slaughter Beach (S), *Commons*, 16 July 1896 (A); beach, Wachapreague (Ac), *Fernald & Long*, 4151, 26 July 1934 (P); *R. R. Tatnall*, 3201, 17 Oct. 1936 (T).

Cynoglossum L. HOUND'S TONGUE.

C. officinale L. COMMON HOUND'S TONGUE.

Occasional, in meadows and waste ground, New Castle County: fields along Pike Creek, *Commons & Canby*, 5 June 1863 (A); along Brandywine Creek, Rockland, *Commons*, 27 May 1865 (A); meadow on Pike Creek, $1\frac{1}{2}$ mi. n. of Choate, *R. R. Tatnall*, 2161, 4 June 1934 (T, P). May, June. Nat. from Europe.

C. virginianum L. WILD COMFREY.

Frequent in rich woods of the Piedmont; less common on the Coastal Plain, southward to Kent (Del.) and Talbot Counties, (*Earle*). May.

Hackelia Opiz. STICKSEED.

H. virginiana (L.) Johnston. (*Lappula virginiana* (L.) Greene.
See Johnston: Contrib. Gray Herb. lxvii, 45. 1923.)
BEGGAR'S LICE.

Infrequent in rich woods of the Piedmont; one collection on the Coastal Plain: Easton Point (Ta), Earle, 3968, 28 Sept. 1944 (P).

Asperugo L.

A. procumbens L. MADWORT.

A waif on wharves in Wilmington: E. Tatnall, 2 June 1897 (A, D); Commons in 1897, 1898 (A). Adv. from Europe.

Symphytum L.

S. officinale L. COMFREY.

Escaping to waste ground, and persisting: Greenbank (NC), Commons, 7 Aug. 1872 (A); Millsboro (S), Commons, 8 July 1884 (A); 5 mi. w. of Dover (K), R. R. Tatnall, 1472, 9 July 1932 (T). July. Introd. from Europe.

Myosotis L. FORGET-ME-NOT.

M. scorpioides L. TRUE FORGET-ME-NOT.

Rare, in wet ground, New Castle County: Mundy's meadow, near Mt. Cuba, Frances R. Tatnall, 14 Oct. 1928 (T); bed of Brandywine Creek at Alapocas, Wilmington, R. R. Tatnall, 1550, 21 Aug. 1932 (T). May, June. Nat. from Europe.

M. laxa Lehm. SMALLER FORGET-ME-NOT.

Frequent in wet ground, Piedmont, and Coastal Plain of New Castle, Kent (Del.) and Cecil Counties. Mid-June to mid-Aug.

M. versicolor (Pers.) Sm.

Infrequent, in fields, upland New Castle County. Last collected in 1897. May, June. Nat. from Europe.

M. micrantha Pallas.

One station: on roadside, $\frac{1}{4}$ mi. n. of Cedar Creek bridge, 5 mi. s. e. of Milford (S), F. M. Jones & R. R. Tatnall, 2504, 5 May 1935 (T, P, A, G). Locality since destroyed by widening the road. Nat. from Europe.

Myosotis BORAGINACEAE—VERBENACEAE *Verbena*

M. verna Nutt. (*M. virginica* (L.) BSP. See Fernald: *Rhodora* 43, 488. 1941.)

Infrequent in the Piedmont of New Castle County, and southward on the Coastal Plain to the Virginia Line. May, June.

Mertensia Roth.

M. virginica (L.) DC. VIRGINIA (or BRANDYWINE) COWSLIP.

Common in alluvial soil in the Piedmont area. Mid-April, May.

Lithospermum L. GROMWELL.

L. arvense L. CORN GROMWELL.

Common; fields, meadows and roadsides, Piedmont, and southward on the Coastal Plain, at least to Sussex and Dorchester Counties. Mid-April, May. Nat. from Europe.

Onosmodium Mx. FALSE GROMWELL.

O. virginianum (L.) DC.

Infrequent, in dry sandy ground, Piedmont, and Coastal Plain of New Castle, Kent (Del.) and Wicomico Counties. June, early July.

Echium L.

E. vulgare L. VIPER'S BUGLOSS.

Infrequent, in fields and on roadsides along the Fall Line; one station in Queen Anne's County; near Chestertown, *E. G. Vanatta*, 8 Aug. 1903 (A). Nat. from Europe.

VERBENACEAE (VERVAIN FAMILY)

Verbena L.

V. officinalis L. EUROPEAN VERVAIN.

Infrequent, in streets of Wilmington; also in Cecil, Sussex, Worcester and northern Accomac Counties. July to early Sept. Nat. from Europe.

V. urticaefolia L. WHITE VERBENA.

Frequent in thickets and waste places, chiefly in the Piedmont; occasional on the Coastal Plain: Noxontown Pond (NC), *R. R. Tatnall*, 1519, 7 Aug. 1932 (G); near Easton (Ta), *Earle*, 1734, 31 July 1938 (P), and 3112, 4 Sept. 1940 (P). Late June to early Sept.

V. simplex Lehm. (*V. angustifolia* Mx. See Fernald: *Rhodora* 40, 182. 1938.)

Rather frequent; Piedmont of New Castle County, and sandy fields and roadsides of the Coastal Plain southward to Sussex and Dorchester Counties. Late May to July.

V. hastata L. BLUE VERBENA.

Common in meadows, Piedmont, and Coastal Plain as far south as Wicomico County. Late June through Aug.

V. stricta Vent. HOARY VERBENA.

Occasionally established on roadsides and in waste ground, "Hares Corner road," (NC), *E. Tatnall*, Dec. 1881 (D, A); dry sand, Seaford (S), *Commons*, 10 Sept. 1896 (A); sandy wastes, shore of Nanticoke River at Seaford, *R. R. Tatnall*, 3122, 22 Aug. 1936, (T, P, G) and *Earle*, 1781, 3 Sept. 1938 (P). Introd. from west of the Alleghenies.

Lippia L. FROG FRUIT.

L. lanceolata Mx.

Infrequent; on river banks and saline shores, from Dover (K), *E. Tatnall* in 1895 (A), southward to Cape Charles. July to mid-Sept.

Callicarpa L.

C. americana L. FRENCH MULBERRY.

Frequent in pine woods of the southern half of Northampton County; one station at Salisbury (Wi), *Canby & Rose*, 839, 25 Sept. 1894 (U). Mid-July, early Aug.

C. purpurea Juss.

Escaped and well established in a swampy thicket along Lea's Run, Wilmington: *E. Tatnall*, in 1876 and 1896 (D), and *R. R. Tatnall*, 13 Sept. 1886 (T). Locality long since destroyed. Introd. from Asia.

LABIATAE (MINT FAMILY)

Teucrium L. GERMANDER.

T. canadense L. (*T. littorale* Bicknell. See *Rhodora* 35, 392. 1933.)

Common in maritime salt marshes of the Coastal Plain. July to early Sept.

Var. *virginicum* (L.) Eaton. (*T. canadense* of Gray's Man., ed. 7.)

Infrequent, in meadows and on river shores, northern Cecil and New Castle Counties. July.

Trichostema L. BLUE CURLS.

T. dichotomum L.

Common throughout, in dry pinelands and sandy open ground. Late Aug., mid-Sept.

T. setaceum Houtt. (*T. lineare* Walt. See *Rhodora* 42, 478. 1940.)

Rare; rocky banks and dry sandy soil: Salisbury (Wi), *Canby*, Sept. 1863 (A); Wilmington, *Commons*, 18 Aug. 1876 (A).

Scutellaria L. SKULLCAP.

S. lateriflora L. MAD-DOG SKULLCAP.

Frequent in moist thickets, from near the Fall Line to Talbot and Sussex Counties. Mid-July, Aug.

S. saxatilis Riddell.

Rare, in rocky woods: west bank of Brandywine Creek, opposite Bancroft's dam, *E. Tatnall*, 10 June 1836 (A, G); same locality, *R. R. Tatnall*, 21 June 1886 (T), *Commons*, 19 June 1897 (A); near Centreville (NC), *Commons*, 9 July 1877 (A).

S. serrata Andr.

Rare, on banks of the Susquehanna River: Conowingo (Ce), *J. J. Carter*, 1 June 1906 (A).

S. elliptica Muhl. (*S. pilosa* Mx. See Fernald: *Rhodora* 47, 200-201. 1945.)

Frequent on wooded slopes and in sandy soil, northern New Castle and Cecil Counties; apparently rare farther south: near Easton (Ta), *Earle*, 3640, 28 July 1942 (A). Mid-June to mid-July.

S. epilobiifolia Hamilton. (*S. galericulata* of manuals. See Fernald: *Rhodora* 23, 85-86. 1921.)

Infrequent, in wet places on the Coastal Plain of New Castle County. June to Aug.

S. integrifolia L.

Common in moist ground of the Piedmont area; less frequent throughout the Coastal Plain. June, mid-July.

S. parvula Mx.

Rare, in dry sandy soil: Newport (NC), *E. Tatnall*, "May-" (A); Rehoboth (S), *Canby*, n. d. (D).

S. nervosa Pursh. (Incl. var. *calvifolia* Fern., in *Rhodora* 47, 174-175. 1945.)

Rare, in woods of the Piedmont: Conowingo (Ce), *J. J. Carter*, 21 May 1865 and 19 Aug. 1906 (A); and *E. B. Bartram*, 30 May 1907 (A); open woods near Perry's tavern (NC), *Canby*, 12 June 1897 (A, P); open woods near Hanby's Corner, Brandywine Hundred (NC), *Canby*, 22 May 1897 (D); woods near Point Breeze School House, Arden (NC), *Canby*, 12 June 1897 (D).

Marrubium L.**M. vulgare** L. HOREHOUND.

Escaping, and persisting in farm yards and waste ground. June, July. Nat. from Europe.

Agastache Clayton. GIANT HYSSOP.**A. nepetoides** (L.) Ktze. (*Lophanthus nepetoides* Benth.)

Infrequent in the Piedmont area; one collection from Talbot County: $\frac{3}{4}$ mi. s. of Longwoods, *R. R. Tatnall*, 1623, 5 Sept. 1932 (T). Late July to early Sept.

A. scrophulariaefolia (Willd.) Ktze. (*Lophanthus* Benth.)

Infrequent, in valleys of Red Clay and Brandywine Creeks (NC). Mid-Aug., Sept.

Nepeta L.✓ **N. Cataria** L. CATNIP.

Common weed about dwellings and farm yards. July to Sept. Nat. from Europe.

N. hederacea (L.) Trevisan. (*N. Glechoma* Benth.) GROUND IVY. GILL-OVER-THE-GROUND.

Frequent in meadows and waste places. May to July. Nat. from Europe.

Prunella L.

P. vulgaris L. SELF HEAL.

Frequent throughout, in woods and fields, and on roadsides. June into Oct.

Physostegia Benth. FALSE DRAGON HEAD.

P. virginiana (L.) Benth. (Incl. *P. denticulata* (Ait.) Benth.)

An infrequent escape from cultivation along the Susquehanna River (Ce), and in New Castle and Sussex Counties. July into Sept.

Lamium L. DEAD NETTLE.

L. amplexicaule L. HENBIT.

A common weed about gardens, fields and roadsides, throughout the Peninsula. Early April, May. Nat. from Europe.

L. purpureum L.

Infrequent, in fields and woods along the Brandywine Creek; one station in Talbot County: field 3 mi. n. w. of Easton, *Earle*, 2368, 11 May 1940 (P). May. Nat. from Europe.

L. maculatum L.

An occasional escape from cultivation: Wilmington, *Commons & Tatnall* in 1897 (A); below Stanton (NC), *Canby* in June 1902 (D). Introd. from Europe.

Leonurus L. MOTHERWORT.

L. Cardiaca L. COMMON MOTHERWORT.

A frequent weed in waste places. June, July. Nat. from Europe.

L. Marrubiastrum L.

Frequent in waste ground; Piedmont of New Castle County. July, Aug. Adv. from Europe.

Stachys L. HEDGE NETTLE.

S. hyssopifolia Mx.

Infrequent; meadows and pond margins on the Coastal Plain, from near the Fall Line to Sussex County. Late July to early Aug.

S. aspera Mx. (*S. ambigua* (Gray) Britton.)

Seldom collected: Kings Creek (So), *J. H. Holmes*, 24 July 1890

(UD); west of Dover (K), *H. R. Baker*, 9 July 1932 (UD); "marshes of Nanticoke River" (Wi), *Shreve & Jones*, 1305, 23 Aug. 1906 (U). June.

S. tenuifolia Willd.

Infrequent in wet ground of the Piedmont; rare on the Coastal Plain: near Sharptown (Wi), *Otis*, 10 Aug. 1910 (D); woods along the Susquehanna River, 3½ mi. n. of Port Deposit (Ce), *Hans Wilkens*, 4102, 2 Aug. 1935 (P). Aug., early Sept.

S. hispida Pursh. (*S. tenuifolia* var. *aspera* (Mx.) Fern.)

Common; tidal shores, river banks and meadows, Piedmont, and Coastal Plain southward to Wicomico County. Mid-June, July.

S. palustris L.

One collection: river shore above New Castle, *Commons*, 30 June 1896 (U).

Salvia L. SAGE.

S. lyrata L. WILD SAGE.

Common in dry sandy woods, Piedmont, and Coastal Plain as far south as Worcester County. Mid-May, mid-June.

Monarda L. HORSE MINT. BERGAMOT.

M. clinopodia L.

Rare, in the valley of Brandywine Creek (NC): below Beaver Valley, *Canby*, 3 July 1896 (D); Point Lookout, ½ mi. n. w. of Granogue, *R. R. Tatnall*, 1481, 12 July 1932 (T).

M. fistulosa L. WILD BERGAMOT.

Frequent in dry open soil, in or near the Piedmont province. July, Aug.

M. punctata L. HORSE MINT.

Common in dry sandy soil, Caroline and Kent (Del.) Counties, and southward to northern Accomac County; rare in the northern part of the Coastal Plain: Delaware Junction (NC), *Commons*, 16 Sept. 1863 (A), locality destroyed by cultivation; roadside, Town Point (Ce), *M. J. Popowski*, 29 Aug. 1937 (A). Aug., mid-Sept.

Blephilia Raf.

B. ciliata (L.) Raf.

One collection: fields, Centreville (NC), *Commons*, 17 June 1865 (A).

B. hirsuta (Pursh) Benth. WOOD MINT.

One collection: in woods along Beaver Valley road near Brandywine Creek (NC), *R. R. Tatnall*, 14 June 1925 (T).

Hedeoma Pers. PENNYROYAL.

H. pulegioides (L.) Pers.

Frequent in dry soil of the Piedmont; less common on the Coastal Plain. Aug.

Melissa L. BALM.

M. officinalis L.

Escaped, and established about dwellings and on roadsides, northern New Castle County. July, Aug. Introd. from Europe.

Satureja L.

S. hortensis L. SUMMER SAVORY.

Escaped to waste ground in Wilmington, *Commons*, 25 Aug. 1897 (A). Introd. from Europe.

S. Nepeta (L.) Scheele. BASIL THYME.

Occasional, on dry soil: dry hills, Fredericktown (Ce), *Commons*, 13 June 1876 (A); "Eastern Shore of Virginia," *Canby*, Oct. 1891 (D); farm $3\frac{1}{2}$ mi. w. n. w. of Longwoods (Ta), *Earle*, 3738, 6 Sept. 1942 (P); $\frac{3}{4}$ mi. s. w. of Easton (Ta), *Earle*, 3984, 1 Oct. 1944 (P).

S. vulgaris (L.) Fritsch var. **neogaea** Fern., in *Rhodora* 46, 388. 1944. (*Calamintha Clinopodium* Benth.) BASIL.

Frequent in dry woods and on roadsides of the Piedmont; rare on the Coastal Plain, at least as far south as Sussex County. Late June to early Sept.

Origanum L.

O. vulgare L. WILD MARJORAM.

Frequent on dry sandy banks, New Castle and Cecil Counties. Mid-June to early Sept. Nat. from Europe.

Appears to reach its southern limit in lower New Castle County.

Pycnanthemum Mx. MOUNTAIN MINT.

P. clinopodioides T. & G.

Rare, in the Piedmont of New Castle County: Wills Rock, Wilmington, *Commons*, 18 Aug. 1876 (A). According to *Commons*, this species was collected by *Canby* "near Swayne Station, W. & N. R. R." in 1872, but no specimens have been seen.

P. setosum Nutt. (*P. aristatum* Mx.)

Infrequent, in pine barrens of Kent (Del.), Sussex, Wicomico and Worcester Counties. July, Aug.

P. flexuosum (Walt.) BSP.

Frequent; dry thickets, fields and roadsides of the Piedmont, and southward on the Coastal Plain at least to Talbot County (Earle). July, early Aug.

P. virginianum (L.) Durand & Jackson.

Rare, in Cecil and New Castle Counties: Elk Neck road (Ce), Otis, 5 Aug. 1913 (D); 2½ mi. n. e. of Conowingo (Ce), True, 589, 4 Aug. 1935 (P). According to E. Tatnall (MS Catalog), "common, dry thickets and old fields" (NC).

P. verticillatum (Mx.) Pers.

Infrequent, in wet ground of the Coastal Plain, in New Castle and Kent (Del.) Counties. July, Aug.

P. incanum (L.) Mx.

Infrequent in dry ground of the Piedmont; rare on the Coastal Plain: ½ mi. w. of Greenbackville (Ac), R. R. Tatnall, 4340, 9 Aug. 1939 (T, P); Long Point, 5½ mi. w. of Easton (Ta), Earle, 2270, 13 Aug. 1939 (P). July, Aug.

Var. **Loomisii** (Nutt.) Fern.

Cited for Delaware by Fernald in *Rhodora* 37, 440. 1935 (G). Specimens not seen.

P. muticum (Mx.) Pers.

Frequent in low ground along the Fall Line; less common southward to Sussex County. July, Aug.

Thymus L.

T. Serpyllum L. WILD THYME.

Infrequent on grassy banks in northern New Castle County; "naturalized" at Nanticoke (Wi), J. J. Carter, 13 June 1906 (A). July, Aug. Nat. from Europe.

T. vulgaris L. GARDEN THYME.

Occasionally escaping from gardens, and persisting on grassy roadsides: 1 mi. n. e. of Wilmington, Commons, 1 Sept. 1896 (A). Reported by E. Tatnall (MS Catalog) as collected by Canby, 17

June 1897, along "road from Marshallton to Hockessin, 1 mi. n. w. of Greenbank," no specimen seen. Nat. from Europe.

Cunila L. DITTANY.

C. origanoides (L.) Britton. (*C. mariana* L.)

Frequent in dry woods, Piedmont of New Castle County; rare and local on the Coastal Plain: 5 mi. s. s. e. of Easton (Ta), *Earle*, 3103, 4 Sept. 1940 (P); woods 3 mi. n. w. of Dover (K), *R. R. Tatnall*, 4670, 5 Sept. 1940 (T). Mid-Aug., Sept.

Lycopus L. WATER HOREHOUND.

See Benner: *Bartonia* 16, 46-47. 1934; Hermann: *Rhodora* 38, 373-375, 1936, with key to fruit characters.

L. virginicus L. BUGLE WEED.

Frequent in moist soil, Piedmont and Coastal Plain southward to Northampton County. Late July into Sept.

L. uniflorus Mx. BUGLE WEED.

Infrequent, in low ground, Piedmont, and Coastal Plain at least as far south as Sussex and Talbot Counties. Late July into Sept.

L. amplexans Raf. (*L. sessilifolius* Gray. See Fernald: *Rhodora* 46, 56-57. 1944.)

Infrequent in moist woods and low sandy soil, from the Pennsylvania line southward to Worcester County. Early Aug. into Oct.

L. rubellus Moench.

Infrequent, on the Coastal Plain, in swamps and shallow water. Mid-Sept., Oct.

L. europaeus L.

Common along streams, and on borders of fresh or brackish marshes, Coastal Plain of Cecil and New Castle Counties; rare farther south: n. of Ocean City (Wo), *Fogg*, 11380, 12 Sept. 1936 (P). Mid-Aug. into Oct. Nat. from Europe.

L. americanus Muhl.

Common in wet places, from the Pennsylvania line to Worcester County. Mid-July into Oct.

Var. *Longii* Benner.

In the same habitats, but less frequent, New Castle and Kent Counties, Del.

Mentha L. MINT.

M. longifolia (L.) Hudson. (*M. sylvestris* L.)

Infrequent, in meadows and waste ground of New Castle and Cecil Counties. June, July. Nat. from Europe.

M. rotundifolia (L.) Hudson.

Escaping from cultivation in New Castle and Sussex Counties. Not reported since 1899. Nat. from Europe.

M. spicata L. (*M. viridis* L.) SPEARMINT.

Frequent; moist fields and stream banks of the Piedmont. July. Nat. from Europe. *Lower Pied*

M. piperita L. PEPPERMINT.

Frequent in moist ground, Piedmont, and southward on the Coastal Plain at least to Wicomico County. July, Aug. Nat. from Europe.

M. aquatica L. WATER MINT.

Two known localities: shore of Nanticoke River, Seaford (S), *Canby*, Aug. 1874 (D, U); *Commons*, 1 Sept. 1882 and 10 Sept. 1896 (A); Cheswold (K), *J. H. Holmes*, Aug. 1890 (U).

M. gentilis L. (*M. sativa* L.)

Infrequent; in waste places and on river banks, in New Castle and Cecil Counties. July, Aug. Nat. from Europe.

M. arvensis L.

Rare: North East (Ce), *S. Brown*, 4 July 1903 (A); Red Point, shore of North East River (Ce), *Otis*, 9 Aug. 1912 (D); roadside, Newark (NC), *P. W. Baker*, 13 July 1924 (UD).

Var. *villosa* (Benth.) Stewart. See *Rhodora* 46, 331-335. 1944.
WILD MINT.

Infrequent; meadows and stream banks in the Piedmont of New Castle County. July, Aug.

Collinsonia L. HORSE BALM.

C. canadensis L. STONE ROOT.

Common in rich rocky woods of the Piedmont; local on the Coastal Plain southward to Talbot County (*Earle*). July to mid-Sept.

Perilla L.**P. frutescens** (L.) Britton var. **crispa** (Benth.) Deane.

Frequent and rapidly spreading in the Piedmont; rare on the Coastal Plain: Moore's Pond, 4 mi. s. e. of Laurel (S), *R. R. Tatnall*, 4104, 12 Oct. 1938 (T, A); edge of woods, 2 mi. s. s. e. of Longwoods (Ta), *Earle*, 3501, 1 Sept. 1941 (P, A). Aug., mid-Sept. Nat. from eastern Asia.

SOLANACEAE (NIGHTSHADE FAMILY)

Solanum L. POTATO.**S. Dulcamara** L. BITTERSWEET.

Infrequent, in hedges and low ground, northern New Castle County. Mid-June, mid-July. Nat. from Europe.

S. nigrum L. COMMON NIGHTSHADE.

Frequent in fields, salt marshes and waste ground, throughout. Late June to Sept.

S. carolinense L. HORSE NETTLE.

Frequent in fields and waste ground, Piedmont province, and southward on the Coastal Plain at least to Talbot County (*Earle*). Late June to mid-Aug. *Herb. Soc.*

S. sisymbriifolium Lam.

Waif on waste ground near 7th Street bridge, Wilmington, *Commons*, 27 Oct. 1898 (A, D). Adv. from tropical America.

S. rostratum Dunal.

Waif along the Penna. Railroad at Shellpot bridge, Wilmington, *Commons*, 7 Sept. 1897 (A). Introd. from mid-western U. S.

S. citrullifolium A. Br.

A rare weed: Seventh Street near Clayton Street, Wilmington, *Edna Thomas*, in 1893 and 1894 (D); a single plant in a vacant lot at 7th & Rodney Streets, Wilmington, *R. R. Tatnall*, 13 Oct. 1921 (T). Adv. from central U. S.

Physalis L. GROUND CHERRY.

See Key in Deam: Flora of Indiana.

P. ixocarpa Brotero. TOMATILLO.

Cultivated, and occasionally spontaneous in New Castle County: in sandy soil, Deakyne's Landing, *Commons*, 20 June 1866 (A); waste ground near Centreville, *Commons*, 3 Sept. 1869 (A); Wilmington, *Commons*, 16 Oct. 1900 (A). Introd. from the Southwest.

P. angulata L.

Rare, in sandy soil, Sussex County: Cypress Swamp near Gumboro, *Commons*, 24 Sept. 1874 (A).

P. pruinosa L. STRAWBERRY TOMATO.

Rare, in sandy soil, New Castle County: fields and wastes, Centreville, *Commons*, 16 Sept. 1868 (A).

P. Alkekengi L. WINTER CHERRY.

Cultivated and occasionally escaping. (Eastern Asia.)

P. heterophylla Nees.

Frequent in fields and open pinelands, New Castle, Sussex and Wicomico Counties. Late May to mid-July.

P. subglabrata Mack. & Bush.

Frequent in fields and sandy soil, New Castle County; occasional farther south: near Longwoods (Ta), *Earle*, 3500, 1 Sept. 1941 (P); 1¼ mi. s. s. e. of Unionville (Ta), *Earle*, 3949, 27 Sept. 1944 (P). July.

P. virginiana Mill. (*P. lanceolata* of manuals.)

Infrequent, in dry sandy soil, Sussex and Wicomico Counties. Late May to July.

Nicandra Adans.

N. Physalodes (L.) Pers. APPLE-OF-PERU.

Cultivated, and occasionally escaping to waste ground. Introd. from Peru.

Lycium L. MATRIMONY VINE.

L. halimifolium Mill. (*L. vulgare* Dunal.)

Infrequent, about dwellings and in waste places. Introd. from Europe.

Datura SOLANACEAE—SCROPHULARIACEAE *Verbascum*

Datura L. JIMSON WEED. THORN APPLE.

✓ *D. Stramonium* L. (Incl. *D. Tatula* L.)

Frequent in cultivated and waste ground. Late summer. Nat. from tropical America.

[*D. Metel* L.

Reported by *E. Tatnall* (MS Catalog) as collected by himself at "railroad crossing, Ninth Ward," Wilmington, no date. No specimen seen.]

Hyoscyamus L.

H. niger L. BLACK HENBANE.

A rare waif: waste ground near Centreville (NC), *Commons*, 9 July 1871 (A); yard of Methodist parsonage, Sharptown (Wi), *Otis*, 20 July 1914 (D). Nat. from Europe.

Nicotiana L. TOBACCO.

N. longiflora Cav.

An occasional escape from cultivation in northern New Castle County.

Petunia Juss.

P. parviflora Juss.

One known station: upper edge of salt marsh, Wachapreague (Ac), *Fernald & Long*, 4169, 26 July 1934 (P, T). Native of tropical America.

"An extension northward of the natural range, from Florida"; *Rhodora* 37, 440. 1935.

P. violacea Lindl.

Cultivated, and infrequently spontaneous in waste places about Wilmington. Native of Argentina.

SCROPHULARIACEAE (SNAP DRAGON FAMILY)

Verbascum L. MULLEIN.

✓ *V. Thapsus* L. COMMON MULLEIN.

A common weed of fields and roadsides in the northern part of our range. Nat. from Europe. *fl. yellow*

✓ *V. Blattaria* L. MOTH MULLEIN.

Common weed northward; one collection from Talbot County: *fl. white*

4 mi. n. w. of Easton, *Earle*, 2294, 3 Sept. 1939 (P). Nat. from Europe.

V. Lychnitis L. WHITE MULLEIN.

Rare, in waste places about Wilmington: *Commons*, in 1898 (D, A). Adv. from Europe.

Linaria Hill. TOADFLAX.

L. vulgaris Hill. BUTTER-AND-EGGS.

Common weed of fields and roadsides, throughout our range. June to Sept. Nat. from Europe.

L. canadensis (L.) Dumont.

Common in sandy soil throughout most of our range, especially on the Coastal Plain; rare south of the Virginia line: Chincoteague Island (Ac), *True*, 27 June 1928 (P); 3 mi. s. of Bayview (No), *R. R. Tatnall*, 2614, 2 June 1935 (T, A); Cape Charles, s. of Kiptopeke (No), *Fosberg*, 14640, 18 April 1938 (P). Late May, June.

Chaenorrhinum Reichenb.

C. minus (L.) Lange. (*Linaria minor* (L.) Desf.)

Rare, usually on railroad ballast: at Purnell Pond, 1 mi. n. e. of Snow Hill (Wo), *R. R. Tatnall*, 31, 31 May 1928, and later collections (T, G, A); same locality, *True*, 30, June 1928 (P); Granogue Station (NC), *R. R. Tatnall*, 4892, 5 July 1941 (T, A). Late May to mid-Sept. Adv. from Europe.

Kickxia Dumortier.

K. Elatine (L.) Dumort. (*Linaria Elatine* (L.) Mill.)

Of rather frequent occurrence in sandy soil of the Coastal Plain, from near the Fall Line southward to Somerset County. Mid-July to early Sept. Nat. from Europe.

Cymbalaria Hill.

C. muralis Gaertn. KENILWORTH IVY.

Cultivated, and sometimes escaping and persisting.

Scrophularia L. FIGWORT.

S. marilandica L.

Frequent in rich woods of the Piedmont, in New Castle and Cecil Counties; rare on the Coastal Plain: Grove Point (Ce), *R. R.*

Tatnall, 2435, 13 Oct. 1934 (T); 2½ mi. e. s. e. of Cecilton (Ce), *Long*, 48415, 16 May 1936 (A); along Mill Creek 2 mi. n. of Longwoods (Ta), *Earle*, 3508, 22 Nov. 1941 (P). Mid-July to early Sept.

***S. lanceolata* Pursh.** (*S. leporella* Bickn.)

Rare: shores of Delaware River near Wilmington, *Canby*, 23 June 1896 (D).

Penstemon Mitchell. (*Pentstemon* Ait.) BEARD-TONGUE.

***P. hirsutus* (L.) Willd.** (*P. pubescens* Willd.)

Rare: Wooddale (NC), *Commons*, in 1865 (A); Leslie (Ce), *J. Crawford*, 12 June 1897 (A); Elk Neck (Ce), *W. L. Abbott*, 31 May 1923 (A). Late May, June.

***P. laevigatus* Sol.**

Our only record is the following: "Delaware," *Nuttall* (A). Neither date nor specific locality is given, but the specimen was probably collected in Sussex County, in 1809.

***P. Digitalis* Nutt.**

Frequent and rapidly spreading in the Piedmont province; rare on the Coastal Plain: west of Pocomoke City (So), *R. R. Tatnall*, 2666, 4 June 1935 (T, P, A); 1½ mi. so. of Exmore (No), *R. R. Tatnall*, 3390, 1 June 1937 (T). June.

Chelone L. TURTLEHEAD.

***C. glabra* L.**

Frequent in damp ground, Piedmont, and Coastal Plain southward to Wicomico County. Sept.

Mimulus L. MONKEY FLOWER.

***M. ringens* L.**

Frequent in wet ground in the Piedmont and Coastal Plain of New Castle and Cecil Counties; infrequent farther south, to the Virginia line. Mid-July, Aug.

***M. alatus* Ait.**

Infrequent in wet soil, Piedmont province, and southward on the Coastal Plain to the Virginia line. Mid-July to early Sept.

Bacopa Aublet. WATER HYSSOP.

For revised treatment of *Bacopa* and *Mecardonia* see Pennell: Proc. Acad. Nat. Sci. Phila. Vol. XCVIII, (1946), pp. 83-98.

B. Monnieri (L.) Pennell. (*B. Monnieri* (L.) Drake.)

One collection: Smith Island (No), *W. Palmer* (U).

The northern limit for this southern species.

B. stragula Fern. (*Herpestis rotundifolia* Gaertn. f. See *Rhodora* 44, 434 sqq. 1942.)

Rare, in tidal mud: Salisbury (Wi), *Canby* in 1863 (A); *Commons* in 1867 (A); in Wicomico River at Shad Point, below Salisbury, *R. R. Tatnall*, 3963, 8 Sept. 1938 (T). July to Sept.

Here reaching its northern limit.

Mecardonia Ruiz & Pavon.**M. acuminata** (Walt.) Small. (*Bacopa acuminata* (Walt.) Robinson.)

One collection: Fruitland (Wi), *A. Huy* (G).

Here reaching the northern limit of its range.

Gratiola L. HEDGE HYSSOP.**G. lutea** Raf. (*G. aurea* Muhl.)

Frequent in wet sand, from southern New Castle County to Sussex and Wicomico Counties. June to mid-Sept.

G. ramosa Walt.

One known collection: Salisbury (Wi), *Canby*, without date (A).

G. viscidula Pennell. (*G. viscosa* Schwein.)

Known in our area only from swamps along the Delaware River near Wilmington, where it was first collected by *Commons* in 1866 (A), and later by *Commons & Tatnall* in 1894 and 1897 (D, A).

G. neglecta Torr. (*G. virginiana* L. of manuals.)

Infrequent, in wet ground, New Castle County; occasional farther south: Chincoteague Island (Ac), *Canby*, no date (Field Mus.); moist woodroad, Wachapreague (Ac), *R. R. Tatnall*, 2633, 3 June 1935 (T, P, G); woods 4 mi. w. n. w. of Easton (TA), *Earle*, 3419, 5 July 1941 (P). June, mid-July.

G. virginiana L. (*G. sphaerocarpa* Ell. of manuals.)

Common in wet places on the Coastal Plain, throughout our area. Early May to mid-Oct.

Var. **aestuariorum** Pennell.

"A tidal extreme, . . . known only from the Wicomico River": Salisbury, *Wherry & Pennell*, 12845, 3 Sept. 1925 (A).

Tragiola Small & Pennell.

T. pilosa (Mx.) Small & Pennell. (*Gratiola pilosa* Mx.)

Frequent; wet meadows, river shores and dry pinelands, from Caroline and Sussex Counties to Cape Charles. Aug., early Sept.

Limosella L. MUDWORT.

L. subulata Ives. (*L. aquatica* L. var. *tenuifolia* (Wolf) Pers.)

Rare, in tidal mud: shore of Delaware River, Bellevue (NC), *Commons*, 1 Oct. 1873 (A); shore of North East River, Charlestown (Ce), *Long*, 57098, 20 July 1941, in fruit (A). July to Oct.

Hemianthus Nutt. (*Micranthemum* Mx.)

H. micranthemoides Nutt.

Infrequent, on sandy or muddy shores of rivers, between tides, in New Castle, Caroline, Dorchester, Somerset and Wicomico Counties. Aug. to Oct.

Lindernia Allioni. (*Ilysanthes* Raf.)

L. dubia (L.) Pennell. (*I. dubia* (L.) Barnhart.)

Frequent in wet ground, throughout our range, especially on the Coastal Plain. July to Sept.

Var. **inundata** Pennell.

Rare, in tidal mud: shore of Delaware River, Holly Oak (NC), *Commons*, 28 July 1898 (A); south of Salisbury (Wi), *Wherry & Pennell*, 12852, 3 Sept. 1925 (A); Long Creek, 1 mi. n. of Chesapeake City (Ce), *Long*, 42267, 7 Oct. 1933 (A); Wicomico River at Shad Point, below Salisbury, *R. R. Tatnall*, 3963, 8 Sept. 1938 (T).

L. anagallidea (Mx.) Pennell. (*I. anagallidea* (Mx.) Robinson.)

Frequent, in wet sand or mud, from the Fall Line southward to Cape Charles. July to Sept.

Veronicastrum Fabr. (*Leptandra* Nutt.)

V. virginicum (L.) Farwell. (*Veronica virginica* L.) CULVER'S
Root.

Frequent in dry woodlands and open ground of the Piedmont province; occasional south of the Fall Line: Vandyke (NC), *Van Pelt*, 20 Sept. 1907 (A). July, Aug.

Veronica L. SPEEDWELL.

V. americana (Raf.) Schw. AMERICAN BROOKLIME.

Rare; meadows and springheads in the Brandywine valley: meadow, Wilmington, *William Tatnall*, 6 June 1888 (D); Granogue, *Tatnall & Commons*, 27 May 1896 (D, A). June to early Aug.

V. officinalis L. COMMON SPEEDWELL.

Common in dry woods and open ground of the Piedmont province; becoming scarce southward on the Coastal Plain: woods 2½ mi. n. e. of Cecilton (Ce), *R. R. Tatnall*, 4841, 21 May 1941 (T, A); near Chestertown (QA), *Vanatta*, 30 May 1910 (A); woods 6 mi. e. n. e. of Easton (Ta), *Earle*, 2451, 11 May 1940 (P). Mid-May to mid-July.

V. serpyllifolia L. THYME-LEAVED SPEEDWELL.

Infrequent in fields, meadows and woods of the Piedmont; occasional on the Coastal Plain: 1 mi. s. s. w. of Longwoods (Ta), *Earle*, 3539, 10 May 1942 (P). May, June. Nat. from Europe.

V. peregrina L. PURSLANE SPEEDWELL.

Frequent in the Piedmont area, in wet soil, often as a weed in cultivated ground; less common on the Coastal Plain, southward to Talbot (*Earle*) and Wicomico (*Shreve*) Counties. May, June.

V. arvensis L. CORN SPEEDWELL.

A frequent weed in rocky woods, cultivated soil and sandy open ground, Piedmont, and Coastal Plain at least as far south as Talbot and Sussex Counties. May. Nat. from Europe.

V. persica Poir. (*V. Tournefortii* Gmel.)

Infrequent in cultivated and waste ground about Wilmington; occasional in sandy soil southward: field 2 mi. s. of Princess Anne (So), *R. R. Tatnall*, 1146, 31 May 1931 (T); 5 mi. s. e. of Milford (S), *R. R. Tatnall*, 3685, 16 May 1938 (T, P); 2 mi. n. e. of Trappe (Ta), *Earle*, 3228, 17 May 1941 (P). May. Adv. from Europe.

V. hederæfolia L.

Infrequent; wayside banks and waste places in the Piedmont province. April, May. Nat. from Europe.

Aureolaria Raf. YELLOW FOXGLOVE.**A. virginica** (L.) Pennell. (*Gerardia flava* of Gray's Man., ed. 7.)
DOWNY FALSE FOXGLOVE.

Frequent in rocky oak woods of the Piedmont, and under oaks in open sandy woods of the Coastal Plain, southward to Worcester County. July, early Aug.

A. flava (L.) Farwell. (*Gerardia quercifolia* Pursh.) SMOOTH
FALSE FOXGLOVE.

Infrequent in dry oak woods in the valley of Brandywine Creek (NC); occasional on the Coastal Plain: thicket 1½ mi. w. of Ocean City (Wo), *R. R. Tatnall*, 1602, 4 Sept. 1932 (T). Late July to Sept.

Ssp. **reticulata** (Raf.) Pennell.

One collection: sandy soil, Laurel (S), *H. R. Baker*, 15 Sept. 1926 (UD).

A. pedicularia (L.) Raf.

Infrequent; in oak woods, Piedmont province of New Castle County, and in Sussex County. Aug., Sept.

Gerardia (L.) Benth. (*Agalinis* Raf.)**G. linifolia** Nutt.

Known only from Ellendale (S): upland meadows, *Canby*, Aug. 1874 (A), and Aug. 1891 (D); moist sand, *Commons*, 26 Aug. 1897 (A); *C. S. Williamson*, 29 Aug. 1908 (A, P).

Here reaching its northern limit.

G. purpurea L. LARGE PURPLE GERARDIA.

Common on borders of salt marshes, and in meadows and fields of the interior, from the Fall Line to the Virginia boundary. Late Aug., Sept.

G. maritima Raf.

Frequent in salt marshes and meadows along the coasts of the Atlantic Ocean and Chesapeake Bay, from Accomac County

northward to southeastern New Castle County. Mid-July to mid-Sept.

G. racemulosa Pennell.

Rare, in sandy pine barrens: Felton (K), *Canby*, without date (D); opposite Sharptown, in Dorchester County, *Otis*, without date (A). Sept., mid-Oct.

G. setacea (Walt.) Gmel. (*G. Holmiana* Greene. See Pennell: Scroph. E. Temp. N. A., p. 450.)

Rather rare, in dry sandy woods of the Coastal Plain: Elk Neck (Ce), *W. L. Abbott*, 24 Sept. 1923 (A); near Cod Creek (S), east of Sharptown, Md., *Otis*, 28 Sept. 1914 (A); Ellendale (S), *Pennell*, 12883, 8 Sept. 1925 (A); near Trappe (Ta), *Earle*, 2333, 3 Sept. 1939 (P); American Corner (Ca), *Moldenke*, 13860. Mid-Sept., Oct.

G. tenuifolia Vahl.

Infrequent near and north of the Fall Line; rare on the Coastal Plain, in sandy soil: Vandyke (NC), *S. Brown*, 20 Sept. 1907 (A); Oak Orchard (S), *F. S. Fender*, 1085, 22 Sept. 1935 (P).

G. decemloba Greene.

One collection: sandy pine swamp, $2\frac{3}{4}$ mi. s. e. of Ellendale (S), *R. R. Tatnall*, 3948, 7 Sept. 1938 (T, A).

G. parvifolia (Hook.) Chapm. (*G. obtusifolia* (Raf.) Pennell.)

Rare, in sandy pinelands of the Coastal Plain: Felton (K), *Canby*, Sept. 1867 (D, A); Elk Neck (Ce), *E. C. Leonard*, 5769 (U).

Buchnera L. BLUE HEARTS.

B. americana L.

Rare, in dry sandy or sterile soils, Piedmont and Coastal Plain: near Centreville (NC), *Commons* in 1873 (A); dry fields, Harvey Station (NC), *Commons & Tatnall*, 15 Aug. 1894 (D, A); Townsend (NC), *Canby*, 5 Oct. 1896 and 4 Sept. 1899 (D); Rock Springs (Ce), barrens $\frac{1}{2}$ mi. n. w., *L. F. A. Tanager*, 2 Aug. 1938 (P). Aug., Sept.

Castilleja Mutis. PAINTED CUP.

C. coccinea (L.) Spreng.

Local, in meadows and along streams in the Piedmont province: J. Commons' meadow, near Centreville (NC), *Commons*, 30 May 1864 (A); low ground near Centre Meeting, 1 mi. e. of Centreville

Castilleja SCROPHUL.—LENTIBULARIAC. *Utricularia*

(NC), *Canby* in 1893 (D); Conowingo (Ce), *Long & Bartram*, 1273, 1 June 1913 (A); along rivulet, east side of Brandywine Creek, near Thompsons Bridge, *R. R. Tatnall*, 1769, 26 May 1933 (T); meadow at Mendinhall's Mill, on Mill Creek, 2 mi. s. of Hockessin (NC), *R. R. Tatnall*, 1760, 15 May 1933 (T, P); 1764, 19 May 1933 (A); 2547, 12 May 1935 (T); 2930, 21 May 1936 (G). Mid-May to mid-June.

Melampyrum L. COW WHEAT.

M. lineare Desr. var. *latifolium* Barton. See Fernald: *Rhodora* 44, 446-452. 1942.

Common in sandy woods of the Coastal Plain, from the Fall Line to southern Accomac County. June.

Var. *pectinatum* (Pennell) Fern.

Rare, in dry sandy pine woods: Cape Henlopen (S), *Commons*, 14 July 1898 (A); near Milton (S), *Commons*, 17 Aug. 1899 (A).

Pedicularis L. LOUSEWORT.

P. canadensis L. WOOD BETONY.

Frequent in open woods, New Castle County, chiefly in the Piedmont. Mid-April, May.

P. lanceolata Mx.

Infrequent, in low ground, Piedmont and Coastal Plain areas of New Castle County; one collection from Salisbury (Wi), *J. B. Brinton*, 1 Sept. 1880 (P). Late July to early Oct.

Schwalbea L.

S. americana L.

Rare, in sandy soil of the Coastal Plain: dry soil south of the canal, St. Georges (NC), *E. Tatnall* in 1860 (MS Catalog), *Commons*, 22 July 1875 (A); Ocean City (Wo), *Commons*, 9 Aug. 1878 (A); *Canby*, 23 July 1893 (D). Mid-June to mid-July.

LENTIBULARIACEAE (BLADDERWORT FAMILY)

Utricularia L. BLADDERWORT.

U. inflata Walt.

Infrequent, in ponds and ditches, from central Kent County (Del.) to Worcester County. Late May to Sept.

Var. **minor** Chapm. (*U. radiata* Small.)

Infrequent, in pools and ditches, Sussex County; collected once near Wilmington, *E. Tatnall*, 17 July 1858 (A), and once at Custis Ponds, 4 mi. s. w. of Eastville (No), *R. R. Tatnall*, 3208, 18 Oct. 1936 (T).

U. geminiscapa Benj. (*U. clandestina* Nutt.)

Rare, in ponds of the Coastal Plain: "Cedar Swamp" (NC), *E. Tatnall*, 31 July 1838 (D); Records Pond, Laurel (S), *Fogg*, 1703, 15 June 1926 (P); Kitts Hammock (K), *Larsen*, 349, 350, 10 Oct. 1933 (P).

U. macrorhiza LeConte. (*U. vulgaris* L. var. *americana* Gray.)

Frequent, floating in ponds and ditches, Coastal Plain, from Wilmington southward to Worcester County. Late May through August.

U. gibba L.

Frequent, in mud or shallow water, from the Fall Line southward to Worcester County. July to mid-Sept.

U. biflora Lam.

Rare, in shallow water, Sussex County: Morris Pond, n. of Millsboro, *C. S. Williamson*, 5 July 1908 (A); Betts Pond, 1 mi. n. w. of Millsboro, *R. R. Tatnall*, 412, 30 June 1929 (T, P); Hudson Pond, 5 mi. s. of Milford, *R. R. Tatnall*, 955, 6 July 1930 (T). June, early July.

U. fibrosa Walt.

Rare: ditches and ponds, in shallow water, Sussex County: swamp along Indian River, Millsboro, *Commons*, 18 June 1875 (A); ponds, Frankford, *Commons*, 18 June 1875 (A); ponds by railroad, 3 mi. n. w. of Rehoboth, *R. R. Tatnall*, 2214, 1 July 1934 (T, P), and later collections. July, Aug.

U. intermedia Hayne.

One collection: shallow water, Greenbank (NC), *Commons*, July 1863 (A). Now probably extinct.

U. purpurea Walt.

Infrequent, in shallow ponds and ditches, Kent (Del.) and Sussex Counties. Early July to early Sept.

Utricularia LENTIBULARIAC.—OROBANCH. *Conopholis*

U. resupinata B. D. Greene.

Rare, in shallow margins of ponds, Sussex County: Milford, *Van Pelt & Long*, 21 July 1908 (A); Burton Pond, Angola, *R. R. Tatnall*, 484, 1 Sept. 1929, and 935, 4 July 1930 (T, P, A, G).

U. subulata L.

Infrequent, in bogs and dune hollows of the Coastal Plain, New Castle and Sussex Counties; one collection in Northampton County: wet depression, near beach, Savage Neck, *R. R. Tatnall*, 3764, 21 May 1938 (T). Mid-May to mid-Sept.

U. cleistogama (Gray) Britton. (*U. subulata* var. *cleistogama* Fern. of Gray's Man., ed. 7.)

Rare, in moist sandy soil, Coastal Plain: meadow e. of Georgetown (S), *C. S. Williamson*, 30 Aug. 1908 (A); dune hollows, Savage Neck (No), *Fernald, Long & Fogg*, 5449, 15 Oct. 1935 (P).

U. cornuta Mx.

Rare, in Sussex County: wet shores, Millsboro, *Canby*, Aug. 1877 (A); Red Millpond, near Lewes, *Otis*, 17 Aug. 1923 (A, D). Late June into Aug.

U. juncea Vahl.

Frequent in shallow ponds and ditches, from central Kent County (Del.) to Worcester County. Late July to Sept.

U. virgatula Barnhart.

Rare, in wet sand of the Coastal Plain: margin of Tubmill Pond, 2 mi. n. of Milford (K), *Otis*, 8 Sept. 1920 (A); moist dune hollows, Savage Neck (No), *Fernald, Long & Fogg*, 5450, 15 Oct. 1935 (P, T). Aug., early Sept.

"Tiny imitator of *U. juncea*," *Fernald: Rhodora* 42, 384. 1940.

OROBANCHACEAE (BROOM-RAPE FAMILY)

Epifagus Nutt.

E. virginiana (L.) Bart. BEECH DROPS.

Common parasite on roots of beech trees, in Piedmont and Coastal Plain provinces. Sept., early Oct.

Conopholis Wallr.

C. americana (L. f.) Wallr. SQUAW-ROOT.

Infrequent parasite on roots of oak trees, in valleys of Naamans

Conopholis BIGNONIACEAE—ACANTHACEAE *Justicia*
and Brandywine Creeks, in the Piedmont of New Castle County,
and probably elsewhere. May, early June.

Orobanche L. BROOM-RAPE.

O. minor Sm. CLOVER BROOM-RAPE.

Infrequent; parasitic on roots of clover, Piedmont and Coastal Plain. Late May, June. Nat. from Europe.

O. uniflora L. (*Aphyllon uniflorum* T. & G.)

Frequent in damp woods, Piedmont province; parasitic on the roots of various plants; one collection on the Coastal Plain: 6 mi. e. n. e. of Easton (Ta), Earle, 2417, 11 May 1940 (P). Mid-May, early June.

BIGNONIACEAE (BIGNONIA FAMILY)

Tecoma Juss. TRUMPET CREEPER.

H ✓ **T. radicans (L.) Juss. (*Campsis radicans* (L.) Seeman.)**

Common on cultivated ground, fencerows and dunes, Cape Charles and northward to the Fall Line. Early June to Aug.

Sussex Co.

Catalpa Scop.

C. bignonioides Walt. CATALPA. INDIAN BEAN.

Frequent on roadsides, as an escape from cultivation; Sussex County, and northward to the Pennsylvania line. Nat. from southern U. S.

Bignonia L.

B. capreolata L. CROSS-VINE.

Locally abundant in Worcester County. Mid-May, early June.

Climbs vertically on trees by tendrils. Transverse sections of the stem show the pith in the form of a "plus sign."

ACANTHACEAE (ACANTHUS FAMILY)

Justicia Houst. WATER WILLOW.

J. americana (L.) Vahl. (*Dianthera americana* of manuals. See Fernald: Rhodora 43, 493. 1941.)

Frequent in New Castle and Cecil Counties, in fresh water; one collection in Accomac County: Accomac, J. Crawford, 10 July 1895 (A). June, July.



CROSS-VINE, (*Bignonia capreolata*)

Photographed near Snow Hill, Maryland, where it reaches its northern limit of natural growth. Its showy tubular flowers, and fruit pods, resemble, on a smaller scale, those of its more familiar relative, the Trumpet Creeper.

Ruellia L.

See Fernald: *Rhodora* 47, 1-38, 47-63, 69-70. 1945.)

R. caroliniensis (Walt.) Steudel.

Frequent in woods and thickets, Piedmont area of Cecil County, and southward on the Coastal Plain to Northampton County. Mid-June to mid-July.

Several varieties of this species have been proposed by Fernald, l. c.

R. strepens L.

Infrequent, in rich soil, shores of the Susquehanna and North East Rivers, and Chesapeake Bay, in Cecil and Kent (Md.) Counties. July to early Sept.

Paulownia Sieb. & Zucc.

P. tomentosa (Thunb.) Steud. (*P. imperialis* S. & Z.)

Planted, and frequently spontaneous, especially in the Piedmont. Introd. from Japan.

Considered by many authors to belong to Scrophulariaceae.

PHRYMACEAE (LOPSEED FAMILY)

Phryma L.

P. Leptostachya L. LOPSEED.

Frequent in moist woods, Piedmont, and southward on the Coastal Plain to Talbot County (*Earle*); rare farther south: sandy woods back of the dunes, Savage Neck (No), *Fernald, Long & Fogg*, 5454, 11 Oct. 1935 (P); 2 mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4344, 9 Aug. 1939 (T). July, Aug.

PLANTAGINACEAE (PLANTAIN FAMILY)

Plantago L. PLANTAIN.

P. major L. COMMON PLANTAIN.

Common weed of dooryards and waste places; widely distributed. June to Oct.

Var. *intermedia* (Gilibert) Dcne. (*P. halophila* Bicknell.)

Seldom collected; in salt marshes along the coast: Assateague Island (Ac), *True*, 28 June 1928 (P).

P. Rugelii Dcne.

Common in woods, fields and dooryards, Piedmont area, and southward to Talbot County (*Earle*). June to Sept.

P. lanceolata L. ENGLISH PLANTAIN.

Common in waste places, and on river shores and beaches, Piedmont, and southward at least to Sussex County. May to Oct. Nat. from Europe.

P. aristata Mx.

Becoming common as a weed on sandy shores and dry roadsides, from the Fall Line southward to Sussex and Talbot Counties. June to Oct. Nat. from central U. S.

P. virginica L.

Common; dry sandy woods, fields, roadsides and coastal sands, Piedmont, and southward to northern Accomac County. Mid-April to June.

P. pusilla Nutt. (*P. virginica*)

Infrequent; dry fields in the Piedmont of New Castle County, and on the Coastal Plain in Sussex and Wicomico Counties. Late April to June.

P. heterophylla Nutt.

One collection: moist sandy soil in Cypress Swamp near Gumboro (S), *Commons*, 24 May 1876 (A).

P. indica L. (*P. arenaria* W. & K.)

One collection: sandy beach at Slaughter Beach (S), *Larsen*, 1082, 7 Aug. 1936 (P). Adv. from central Europe.

RUBIACEAE (MADDER FAMILY)

Sherardia L. FIELD MADDER.

S. arvensis L.

Local, in cultivated ground: field 2 mi. s. of Princess Anne (So), *R. R. Tatnall*, 1149, 31 May 1931 (T, A, P, G); weed in lawn, 7 mi. w. of Easton (Ta), *Earle*, 3438, 24 Aug. 1941 (P). Nat. from Europe.

Asperula L.

A. arvensis L.

One collection: waste ground near Faulkland (NC), *Commons*, July & Aug. 1880 (A). Adv. from Europe.

A. odorata L. SWEET WOODRUFF.

Escaped from cultivation, and collected once: near Centreville (NC), *Commons*, 15 Sept. 1874 (A).

Galium L. BEDSTRAW.**G. Aparine** L. CLEAVERS.

Frequent in the Piedmont province, in thickets; less common on the Coastal Plain: 4 mi. w. n. w. of Easton (Ta), *Earle*, 2382, 11 May 1940 (P); 6 mi. e. n. e. of Easton, *Earle*, 2476, 1 June 1940 (P). May, early June.

G. verum L. YELLOW BEDSTRAW.

Local: Chesapeake City (NC), just n. of the village, *R. R. Tatnall*, 367, 28 June 1929 (T, G, A); roadside, Middle Neck (Ce), *R. R. Tatnall*, 2243, 4 July 1934 (T, P); roadside $\frac{3}{4}$ mi. s. w. of Greenville (NC), on Barley Mill road, *R. R. Tatnall*, 4861, 25 May 1941 (T, G, A). Late May to early July. Nat. from Europe.

G. pilosum Air. HAIRY BEDSTRAW.

Frequent throughout; thickets and woods, in dry sandy soil. Late June, July.

Var. **puncticulosum** (Mx.) T. & G.

Infrequent, in pine woods, Piedmont and Coastal Plain.

G. circaeans Mx. WILD LICORICE.

Common in rocky woods of the Piedmont province; less common on the Coastal Plain, at least as far south as Talbot County (*Earle*). June, early July.

G. lanceolatum Torr. WILD LICORICE.

Infrequent, in rich woods, Piedmont province. June, early July.

G. boreale L. NORTHERN BEDSTRAW.

Rare, in the Piedmont of northern New Castle County: near Hockessin, *Commons*, 19 June 1869 (A); along Red Clay Creek above Yorklyn, *Commons*, 23 June 1872 (D); rocky woods near Faulkland, *Commons*, 22 July 1884 (A). June, July.

G. Mollugo L.

Infrequent; fields and waysides of northern New Castle County; rare on the Coastal Plain: roadside $2\frac{1}{2}$ mi. w. of Easton (Ta),

Earle, 3265, 17 May 1941 (P). Mid-May to early July. Nat. from Europe.

G. trifidum L. var. **tinctorium** (L.) T. & G. (*G. Claytoni* of manuals. See Fernald: *Rhodora* 37, 443 sqq. 1935.)

Frequent, in low ground, from the Fall Line southward to Sussex and Talbot Counties. June, July.

G. obtusum Bigel. (*G. tinctorium* of manuals. See Fernald, l. c.)

Common; damp woods, meadows and pond margins; widely distributed north of the Virginia line. Late May through July.

Var. **filifolium** (Wieg.) Fern.

Apparently rare: low ground, $2\frac{1}{4}$ mi. n. w. of Easton (Ta), *Earle*, 1715, 30 May 1938.

G. concinnum T. & G.

Rare, along the Susquehanna River in Cecil County: Conowingo, *E. B. Bartram*, 4 July 1907 (A); *Pennell*, 1589, 1 July 1914 (A); alluvial thickets, Rowlandsville, *Long & Bartram*, 1178, 31 May 1913 (A).

G. asprellum Mx. ROUGH BEDSTRAW.

Frequent in wet places, sprawling over bushes, northern New Castle County. July, Aug.

G. triflorum Mx. SWEET-SCENTED BEDSTRAW.

Common in rich woodlands of the Piedmont; less frequent on the Coastal Plain, as far south as Talbot County (*Earle*). July to early Oct.

G. uniflorum Mx.

Rare, in Northampton County: woods back of dunes, Savage Neck, *Fernald*, *Long & Fogg*, 5457, 11 Oct. 1935 (T); pine woods s. of Kendall Grove, *same*, 5458, 13 Oct. 1935 (P).

A southern species, here apparently at its northern limit.

14 **G. hispidulum** Mx. (*G. bermudense* L.) COAST BEDSTRAW.

Rare, in sands of the Atlantic coast, from Cape Charles to Cape Henlopen: Cape Charles City (No), *Canby*, Sept. 1894 (D); dunes near Cape Henlopen (S), *Commons*, 27 Aug. 1895 (A); pine woods, Chincoteague Island (Ac), *R. R. Tatnall*, 138, 13 Sept. 1928 (T); pine woods, Kiptopeke (No), *Fernald*, *Long & Fogg*, 5460, 14 Oct.

1935 (P, T); dry sand, Savage Neck (No), *R. R. Tatnall*, 3382, 1 June 1937 (T, A); Kiptopeke, *Fosberg*, 14655, 19 April 1938 (P); salt marsh, Chincoteague Island, *Travis*, 638, 21 July 1938 (P).

Diodia L. BUTTONWEED.

D. virginiana L.

Common; margins of fresh-water ponds, ditch banks, dune hollows and borders of salt marshes, from Cape Charles northward to Kent County, Del. Mid-July into Sept.

Here near the northern limit of its range.

D. teres Walt.

Common in sandy open ground, Piedmont, and Coastal Plain to Worcester County; rare south of the Virginia boundary: border of pine woods s. of Kendall Grove (No), *Fernald, Long & Fogg*, 5462, 13 Oct. 1935 (P). July to Sept.

Var. hystericina Fern. & Griseb. (Rhodora 39, 306. 1937.)

Dunes and beaches, Northampton County: Cape Charles City, *Canby*, Aug. 1894 (D); same, *Fogg*, 9736, 8 Sept. 1935 (P); Savage Neck, *Fernald & Long*, 5464, 11 Oct. 1935 (P, T, U); west of Kiptopeke, *Fernald, Long & Fogg*, 5465, 5466, 5467, 14 Oct. 1935, TYPE (P, U).

Mitchella L. PARTRIDGE BERRY.

M. repens L.

Common in dry, or sometimes low, woods, throughout our range. Late May, June.

Cephalanthus L. BUTTONBUSH.

C. occidentalis L.

Common in swamps and along streams, Piedmont and Coastal Plain at least as far south as Wicomico County. July to mid-Aug.

Houstonia L. BLUETS.

H. caerulea L. QUAKER LADIES.

Common in meadows and pastures of the Piedmont, and along the Fall Line; local on the Coastal Plain: salt meadow near Fenwick Island (S), *R. R. Tatnall*, 3725, 18 May 1938 (T, P); $\frac{1}{2}$ mi. n. w. of Berlin (Wo), *Earle*, 2016, 1 May 1939 (P); west of Greenbackville (Wo), *R. R. Tatnall*, 4434, 27 April 1940 (T). Late April, May.

H. purpurea L.

Frequent in woods of the Coastal Plain, Cape Charles and northward to Sussex and Talbot Counties; one station in the Piedmont: woods along the Susquehanna River, north of Conowingo (Ce), *Long & Bartram*, 1 June 1913 (A).

H. lanceolata (Poir.) Britton.

One collection: woods 2 mi. s. of Easton (Ta), *J. A. Jump*, 3 June 1937 (P).

Oldenlandia L.

O. uniflora L. (*O. glomerata* Pursh).

Infrequent, in damp places, from southern New Castle County (Townsend, *Commons*, 16 Sept. 1863, according to E. Tatnall (MS Catalog)), to Cape Charles. Late July to Sept.

CAPRIFOLIACEAE (HONEYSUCKLE FAMILY)

Diervilla Mill. BUSH HONEYSUCKLE.

D. Lonicera Mill. (*D. trifida* Moench).

Rare, in rocky woods of New Castle County: Rattlesnake Run, Wilmington, "*G. W. T.*," 1 June 1844 (T); Mt. Cuba, *Commons*, in 1873 and 1896 (A), and *E. Tatnall*, 29 June 1893 (D); Point Lookout, $\frac{1}{2}$ mi. n. w. of Granogue, *R. R. Tatnall*, 3425, 20 June 1937, and earlier collections (T, P, A, G). June.

Lonicera L. HONEYSUCKLE.

L. japonica Thunb. JAPANESE HONEYSUCKLE.

Escaped from cultivation, and widely established on roadsides and in thickets, to the detriment of all other vegetation. May to July.

L. sempervirens L. TRUMPET HONEYSUCKLE.

Infrequent, in thickets and fencerows, Piedmont and Coastal Plain southward to Talbot and Sussex Counties; also in Northampton County: pine woods at the Cape, s. of Kiptopeke, *Fosberg*, 14635, 18 April 1938 (P); dune sand on Savage Neck, *R. R. Tatnall*, 4191, 8 June 1939 (T). Mid-May into July.

L. dioica L.

One known station: fencerow $1\frac{1}{2}$ mi. s. of Bohemia Mills (Ce), *R. R. Tatnall*, 1090, 10 May 1931 (T, P), and 3291, 13 May 1937 (T, G); *Long*, 37245, 7 May 1932 (A). May.

Symphoricarpos Ludwig.

S. orbiculatus Moench. (*S. vulgaris* Mx.) INDIAN CURRANT.

Infrequent escape from cultivation, on roadsides in New Castle and Wicomico Counties.

S. albus (L.) Blake. (*S. racemosus* Mx.) SNOWBERRY.

Occasional on roadsides, New Castle County: 2 mi. e. of Iron Hill, *Tatnall & Commons*, 29 May 1896 (A); roadside above Concord Station, Wilmington, *Tatnall & Commons*, 21 Sept. 1896 (A).

Triosteum L. HORSE GENTIAN.

T. perfoliatum L. WILD COFFEE.

Frequent, in rich woods of the Piedmont and Coastal Plain at least as far south as Talbot County. Late May, June.

T. aurantiacum Bicknell.

Frequent in fields and on rocky, wooded hillsides of the Piedmont area. Mid-May, early June.

T. angustifolium L.

Infrequent, in dry woods of the Piedmont province. May, June.

Viburnum L. ARROW-WOOD.

V. acerifolium L. ARROW-WOOD.

Common in rocky woods of the Piedmont; infrequent in sandy woods of the Coastal Plain. Late May, early June.

V. Rafinesquianum Schultes. (*V. pubescens* (Ait.) Pursh. See Fernald: *Rhodora* 43, 647. 1941.) DOWNY ARROW-WOOD.

Rare, in moist ground: near Christiana (NC), *Canby*, 18 June 1901 (D); Ocean City (Wo), *J. J. Carter*, 13 Aug. 1909 (A); Snow Hill (Wo), *True*, 21 June 1926 (P).

V. recognitum Fern. (*V. dentatum* of manuals. See Fernald, l. c.)

Common in low ground, Piedmont and Coastal Plain. Mid-May, mid-June.

V. dentatum L. (*V. scabrellum* (T. & G.) Chapm. See Fernald, l. c.)

Frequent in woods and thickets of the Coastal Plain and Piedmont of New Castle and Cecil Counties; less common farther south. June, July.

Viburnum CAPRIFOLIAC.—VALERIANACEAE *Valerianella*

V. cassinoides L. WITHE-ROD.

Frequent in swampy ground, New Castle and Cecil Counties, chiefly on the Coastal Plain. Late April to June.

V. nudum L.

Common in swampy ground from the Pennsylvania boundary southward to Wicomico County; rare farther south: peaty clearing s. of Townsend (No), *Fernald, Long & Fogg*, 5477, in 1935 (P, T); pine woods s. of Townsend (No), *R. R. Tatnall*, 3373, 1 June 1937 (T). June, July.

V. prunifolium L. BLACK HAW.

Common on banks of streams in the Piedmont; less frequent on the Coastal Plain; one collection in Northampton County: woods back of dunes, Savage Neck, *Fernald, Long & Fogg*, 5472, in 1935. May, early June.

Sambucus L. ELDER.

S. canadensis L. COMMON ELDER.

Frequent in open soil of the Piedmont province; infrequent on the Coastal Plain southward to the Virginia line. June, early July.

S. pubens Mx. (*S. racemosa* of Gray's Man., ed. 7.) RED-BERRIED ELDER.

One collection, in the Piedmont of Cecil County: along Octoraro Creek, above Cecil Paper Mill, *Long & St. John*, 1 May 1916 (A).

VALERIANACEAE (VALERIAN FAMILY)

Valeriana L. VALERIAN.

V. pauciflora Mx.

Locally abundant in alluvial soil along the Susquehanna River, in Cecil County: Conowingo, *J. J. Carter*, 19 May 1910 (A), and *Long & Bartram*, 31 May 1913 (A); woods 1 mi. s. of Rowlandsville, *R. R. Tatnall*, 4515, 28 May 1940 (T, A, P, G). Mid-May, early June.

Valerianella Hill. CORN SALAD.

V. olitoria (L.) Dufr. (*V. Locusta* (L.) Betsche.)

Cultivated, and occasionally escaping to waste places, in New Castle, Cecil and Caroline Counties. Introd. from Europe.

Valerianella DIPSACACEAE—CAMPANULAC. *Specularia*

V. radiata (L.) Dufr. var. **Fernaldii** Dyal. (Rhodora 40, 185. 1938.)

Rather frequent, on grassy roadsides and banks of streams, in Sussex, Talbot, Dorchester and Worcester Counties. Mid-May, early June.

DIPSACACEAE (TEASEL FAMILY)

Dipsacus L. TEASEL.

D. sylvestris Huds. WILD TEASEL.

Infrequent, in fields and on roadsides, New Castle, Kent (Del.) and Cecil Counties. July. Nat. from Europe.

Cephalaria Schrader.

C. syriaca Schrad.

Escaped from cultivation to a vacant lot in Wilmington, *Canby*, 1 July 1896 (D, A). Nat. from Europe.

CUCURBITACEAE (GOURD FAMILY)

Sicyos L. ONE-SEEDED CUCUMBER.

S. angulatus L.

Infrequent, in moist thickets, climbing over bushes, in the Piedmont area of New Castle County; rare on the Coastal Plain: 1 mi. s. of Choptank Mills (K), *R. R. Tatnall*, 5044, 15 Sept. 1942 (T); meadow $\frac{1}{2}$ mi. s. w. of Easton (Ta), *Earle*, 3993, 1 Oct. 1944 (P). Aug., Sept.

Echinocystis T. & G.

E. lobata (Mx.) T. & G. WILD BALSAM-APPLE.

Cultivated, and escaping to waste ground, New Castle and Kent (Del.) Counties. Aug., Sept.

[Watermelon, gourd, squash, pumpkin, cucumber, etc., often appear spontaneously after cultivation, but do not become established.]

CAMPANULACEAE (BLUEBELL FAMILY)

Specularia Fabricius.

S. perfoliata (L.) A. DC. VENUS' LOOKING-GLASS.

Common; fields, roadsides and open woods, from the Pennsylvania line to Talbot, Dorchester and Sussex Counties; rare farther south: 3 mi. s. of Bayview (No), *R. R. Tatnall*, 2616, 2 June 1935 (T, P). June, early July.

Campanula L. BELLFLOWER.

C. aparinoides Pursh. MARSH BELLFLOWER.

Infrequent, in grassy swamps, northern New Castle County; also 1 mi. s. w. of Sharptown (Wi), *R. R. Tatnall*, 1612, 4 Sept. 1932 (T). June, early Sept.

C. rapunculoides L.

Escaping to roadsides and thickets, and becoming established, New Castle County, and probably farther south. Introd. from Europe.

LOBELIACEAE (LOBELIA FAMILY)

Lobelia L.

L. cardinalis L. CARDINAL FLOWER.

Common in meadows, ditches and swamps, in the Piedmont province of New Castle and Cecil Counties, and southward on the Coastal Plain to northern Accomac County. Late July to mid-Sept.

L. siphilitica L. GREAT BLUE LOBELIA.

Frequent in swamps and along streams, and occasionally on rocky hillsides, Piedmont province; seldom collected on the Coastal Plain: Elk Neck (Ce), *W. L. Abbott*, 26 Sept. 1927 (P); clearing, 5 mi. s. s. e. of Easton (Ta), *Earle*, 3122, 4 Sept. 1940 (P). Aug., Sept.

[**L. amoena** Mx. McVaugh, in *Rhodora* 38, 283. 1936, refers specimens determined as *L. amoena*, collected by Commons in Sussex County, and by Canby in Somerset County, to *L. elongata* Small, stating that *L. amoena* reaches the northern limit of its range in North Carolina.]

L. elongata Small.

Rare, in wet places on the Coastal Plain: tidal marshes, Princess Anne (So), *Canby*, Aug. 1865 (D), and 8 Sept. 1866 (A); ponds, Millsboro (S), *Commons*, in 1877 and 1880 (A); along Indian River, Millsboro, *S. Brown*, 21 Sept. 1907 (A); along Wicomico River at Upper Ferry (Wi), *A. V. Smith*, in *Rhodora* 42, 279. 1940.

L. puberula Mx. DOWNY LOBELIA

Common in meadows, swamps and low woods, throughout the Coastal Plain. Mid-Aug., Sept.

L. spicata Lam.

Infrequent, in rich, rocky woods and open sandy or serpentine soil of the Piedmont; rare on the Coastal Plain: Frankford (S), *Commons*, 15 June 1875 (A). Early June, July.

Var. **campanulata** McVaugh. See *Rhodora* 38, 316. 1936.

The following collection is cited by McVaugh, l. c.: near Centreville (NC), *Commons*, 30 June 1866 (A).

L. inflata L. INDIAN TOBACCO.

Common in dry open ground of the Piedmont province; infrequent on the Coastal Plain, in New Castle, Kent (Md.), Queen Anne's and Talbot Counties. Mid-July to mid-Sept.

L. Canbyi Gray.

In our range known only from sandy swamps, meadows and ditches at or near Ellendale (S), where it has been collected many times, from 1874 to 1934. Late July to Sept.

L. Boykinii T. & G.

Rare; meadows and ditches, Ellendale (S): *Canby*, 24 July 1893 (D), as *L. Nuttallii*; ditches along railroad, *C. S. Williamson*, 9 July 1908 and 20 June 1909 (A); *Long & Bartram*, 6 July 1913 (A), as *L. paludosa*.

L. Nuttallii R. & S.

Frequent in moist sandy ground, dune hollows and ditches, in Sussex, Wicomico, Worcester and northern Accomac Counties, Early July to mid-Sept.

COMPOSITAE (COMPOSITE FAMILY)**Vernonia** Schreb. IRON-WEED.**V. noveboracensis** Willd.

Common in low ground, Piedmont, and southward on the Coastal Plain at least to Somerset County. Aug., mid-Sept.

V. glauca (L.) Willd.

Common in rocky woods of the Piedmont province; less frequent in sandy soil throughout the Coastal Plain. Aug., Sept.

Elephantopus L. ELEPHANT'S-FOOT.**E. carolinianus Willd.**

Common in damp woods of the Piedmont; infrequent on the Coastal Plain southward to Talbot (*Earle*), and Sussex Counties. Aug., Sept.

E. nudatus Gray

Frequent in sandy soil, preferring open pine woods, from Cape Charles northward to Sussex County. Mid-Aug. to early Oct.

E. tomentosus L.

Infrequent, in dry pine woods, Cape Charles, and northward to Wicomico County: Salisbury, *Canby*, Sept. 1867 (P); *J. J. Carter*, 15 July 1904 (A), here reaching its northern limit.

Sclerolepis Cass.**C. uniflora (Walt.) BSP.**

Frequent in shallow water of ditches and pond margins, in Sussex, Wicomico and Worcester Counties; rare farther north: "Sassafras Cross-roads" (= Green Spring Station) (NC), *Commons*, in 1866 (D, A). Late June through Aug.

Eupatorium L. JOE-PYE WEED. BONESET.**E. dubium Willd.** (*E. purpureum* L., sensu Mackenzie. For this and the next two species, see Wiegand & Weatherby: *Rhodora* 39, 297-306. 1937.) **JOE-PYE WEED.**

Common in wet soil, Piedmont area, and Coastal Plain southward to northern Accomac County. Aug., mid-Sept.

E. fistulosum Barratt. (*E. maculatum* L., sensu Mackenzie.) **HOLLOW-STEMMED JOE-PYE WEED.**

Infrequent, in meadows and damp woods, Piedmont province; one Coastal Plain collection: woods 5 mi. s. e. of Easton (Ta), *Earle*, 3104, 4 Sept. 1940 (P). Aug., Sept.

E. purpureum L. (Probably *E. trifoliatum* sensu Mackenzie.) **PALE-FLOWERED JOE-PYE WEED.**

Rather frequent on rich, wooded slopes of the Piedmont, in New Castle and Cecil Counties. Aug., Sept.

E. capillifolium (Lam.) Small. **DOG FENNEL.**

Frequent; meadows, fields and roadsides, Northampton and

Accomac Counties; occasional farther north: thicket, 2 mi. w. of Ocean City (Wo), *R. R. Tatnall*, 2380, 16 Sept. 1934 (T, P, A, G); near Gumboro (S), *A. V. Smith* in 1939; 1 mi. s. of Dewey Beach (S), *M. T. Travis*, 867, 4 Sept. 1938 (P); 2½ mi. s. of Rehoboth (S), *R. R. Tatnall*, 4748, 12 Oct. 1940 (A, T, G). Mid-Sept. to mid-Oct.

A southern species, reaching the northern limit of its range in Sussex County.

E. serotinum Mx.

Frequent in coastal sands, edges of salt marshes, swamps and pine woods, Kent County (Md.) to Cape Charles; rare in the Piedmont: shore of Susquehanna River, 1 mi. s. of Rowlandsville (Ce), *R. R. Tatnall*, 5172, 10 Oct. 1944 (T, A), and 5239, 10 Oct. 1945 (T). Mid-Aug. to mid-Sept.

E. album L.

Infrequent, in dry sandy soil and moist dune hollows of the Coastal Plain, from Kent (Del.) and Caroline Counties to Cape Charles. Late July to mid-Sept.

Var. **monardifolium** Fern., in *Rhodora* 39, 452. 1937.

One collection: oak copse, Rehoboth (S), *J. R. Churchill*, 5 Sept. 1908 (G).

E. leucolepis T. & G.

Infrequent, in sandy bogs, swampy meadows and dune hollows, Kent (Del.), Sussex, Wicomico and Worcester Counties. Mid-Aug. into Sept.

E. hyssopifolium L. See Fernald: *Rhodora* 44, 458-461. 1942.

Frequent in dry open soil and salt meadows, throughout the Coastal Plain. July through Sept.

Var. **linearifolium** (Walt.) Fern.

Frequent throughout the Coastal Plain. July through Sept.

E. Torreyanum Short.

Rare, in sandy soil of the Coastal Plain: along Tanner Branch, e. of Choptank Mills (K), *Otis*, 12 Aug. 1924 (A); moist thicket at millpond e. of Wattsville (Ac), *R. R. Tatnall*, 152, 14 Sept. 1928 (T).

E. verbenaeifolium Mx.

Common from the Fall Line southward to Northampton County, in swamps, salt meadows and dune hollows. July, Aug.

E. rotundifolium L.

Frequent in fields, meadows and dry pine woods, from near the Fall Line southward at least to Wicomico County. Mid-July to Sept.

E. pubescens Muhl. (*E. rotundifolium* var. *ovatum* Fern., in *Rhodora* 37, 179-181. 1935.)

Frequent in dry sandy ground and borders of salt marshes, Piedmont, and southward on the Coastal Plain to Wicomico County. Aug., Sept.

E. sessilifolium L. UPLAND BONESET.

Frequent on rocky, wooded slopes of the Piedmont province. Mid-July to mid-Sept.

Var. **Vaseyi** (Porter) Fernald & Griscom. See *Rhodora* 37, 180. 1935.

Occasional in dry sand of the Coastal Plain: between Quantico and Salisbury (Wi), *Tidestrom*, 7427 (see the reference to *Rhodora*); woods 1¼ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4351, 10 Aug. 1939 (T). Aug.

E. perfoliatum L. THOROUGHWORT. BONESET.

Common in low ground of the Piedmont, and less frequent on the Coastal Plain to Northampton County. Mid-Aug., Sept.

E. resinosum Torr.

Rare, in low pine barrens: near Gumboro (S), *Commons*, 5 Aug. 1874 (A); "Baltimore Hundred" (S), *Commons*, 10 Sept. 1875 (A). Aug., Sept.

E. rugosum Houtt. (*E. urticaefolium* of manuals. See *Rhodora* 40, 293. 1938, and 43, 557-558. 1941.)

Frequent, in woods and thickets of the Piedmont and northern part of the Coastal Plain; rare southward: woods 5 mi. s. e. of Easton (Ta), *Earle*, 3113, 4 Sept. 1940 (P). Aug. to Oct.

E. aromaticum L.

Infrequent, in sandy woods and thickets of the Coastal Plain,

from the Fall Line southward to Cape Charles; rare in the Piedmont: rocky soil e. of Rock Springs (Ce), *Long*, 28483, 11 Aug. 1923 (A). Aug., Sept.

***E. coelestinum* L. MIST-FLOWER.**

Rather frequent in rich, rocky soil of New Castle and Cecil Counties; less common southward to Cape Charles. Mid-Aug. to early Oct.

***Mikania* Willd.**

***M. scandens* (L.) Willd. CLIMBING HEMP-WEED.**

Common in swamps, ditches and dune hollows, and along streams, from the Fall Line southward to southern Accomac County; one upland station: Rock Springs (Ce), *J. J. Carter*, 5 Aug. 1905 (A). Aug., Sept.

***Liatris* Schreber. BLAZING STAR.**

***L. cylindracea* Mx.**

One collection: canal bank at St. Georges (NC), *E. Tatnall*, without date (D).

Probably a waif from west of the Alleghenies.

***L. scariosa* Willd.**

One station: "near Mt. Cuba, Fulton's Mill, rare," *Commons*, 12 Sept. 1867 (A).

***L. spicata* (L.) Willd.**

Infrequent; meadows and roadsides, Piedmont area; one Coastal Plain station: near Gumboro (S), *Commons*, 24 Sept. 1877 (A). Aug., Sept.

***L. graminifolia* (Walt.) Willd.**

Common on the Coastal Plain, in dry, sandy woods and on roadsides; also in dune hollows and borders of salt marshes, Sussex County and southward to Cape Charles. Sept. to mid-Oct.

The more hirsute plant has been separated by Fernald as var. *lasia* Fern. & Grisc.

***Grindelia* Willd. TAR WEED.**

***G. squarrosa* (Pursh) Dunal.**

One collection: sandy field near Milton (S), *Commons*, 17 Aug. 1899 (A).

Heterotheca Cass.

H. subaxillaris (Lam.) Britton & Rusby.

Common weed in dry pastures and on roadsides, Worcester County, and northward to central Kent (Del.) and northern Caroline Counties.

An introduction from the southern states, spreading rather rapidly northward, and now reaching its northern limit for the Peninsula as noted above. (Also abundant for several miles along highway (Route 44), s. w. of Westville, Gloucester County, N. J.) Aug., mid-Sept. *Sussex Co. - D. W. S.*

Chrysopsis Nutt. GOLDEN ASTER.

C. nervosa (Willd.) Fern. (*C. graminifolia* of authors, not Mx.) Ell. See Rhodora 44, 464-475. 1942.)

Infrequent, in sandy pine barrens and open pine woods, on the Coastal Plain, from Cape Charles northward to Sussex County, where it reaches the northern limit of its range. Sept., mid-Oct.

Var. stenolepis Fern.

Rare: open pine woods along Tonytank Creek, $2\frac{1}{2}$ mi. s. of Salisbury (Wi), *R. R. Tatnall*, 3971, 8 Sept. 1938 (T, G), cited by Fernald, l. c., as transitional.

C. mariana (L.) Nutt.

Common in dry, sandy soil, throughout our range. Sept., Oct.

Solidago L. GOLDENROD.

S. squarrosa Muhl.

Rare; one known station: rocky bank along railroad, opposite Speakman's millpond, 0.3 mi. n. of Mt. Cuba Station. First collected here by *Commons*, 7 Oct. 1864 (D, A); several collections by the writer, in 1932 to 1940 (T, A, G). Late Aug., Sept.

S. caesia L. WOODLAND GOLDENROD.

Common in deciduous woods of the Piedmont; less frequent in sandy woods of the Coastal Plain, as far south as Kent County, Del. Sept., mid-Oct.

S. latifolia L. (*S. flexicaulis* L., in part.)

Infrequent, in rocky woods of the Piedmont. Sept. to mid-Oct.

S. bicolor L. WHITE GOLDENROD.

Common in dry soil, in the northern part of our range; less common southward to Cape Charles. Late Aug. to mid-Oct.

Var. *ovalis* Farwell. (*S. hispida* Muhl.)

Infrequent, New Castle and Cecil Counties.

S. erecta Pursh.

Frequent in dry pine woods, and on sandy roadsides, Talbot and Sussex Counties, and southward to Cape Charles. Mid-Aug., Sept.

S. puberula Nutt.

Infrequent, in open, sandy soil, Coastal Plain of Cecil, New Castle and Kent (Del.) Counties. Sept.

S. stricta Ait.

Rare: pine barren swamps near Gumboro (S), *Commons*, 24 Sept. 1874 (A). Cited by E. Tatnall (MS Catalog) from Collins Beach (NC), *Commons* in 1865, and Townsend (NC), *Tatnall & Commons*, in 1896, specimens not seen.

S. speciosa Nutt. SHOWY GOLDENROD.

Rare: near Rock Springs (Ce), *J. J. Carter*, 23 Sept. 1905 (A). Records (in E. Tatnall, MS Catalog) of this upland species, from Vandyke (NC), *Commons & Tatnall* in 1894, and of var. *angustata* from McCrone's Swamp, Farnhurst (NC), *Canby* in 1865, are perhaps to be referred to *S. puberula*; specimens not seen.

H✓ **S. sempervirens** L. SEASIDE GOLDENROD.

Common in seashore sands, and on brackish tidal river shores, throughout. Mid-Aug. to late Sept. Sussex.

S. patula Muhl.

Infrequent, in swamps and along streams, chiefly in the Piedmont; one collection from Sussex County: Georgetown, *Commons*, 1 Sept. 1896 (A). Aug., Sept.

S. arguta Ait.

Infrequent; banks, woods and thickets, New Castle and Cecil Counties, in both provinces. Late July to early Sept.

S. ludoviciana (Gray) Small.

Rare: pine woods n. w. of Oyster (No), *Fernald, Long & Fogg*,

5512, 14 Oct. 1935 (P). "Very late flowering; in late September and October."

S. juncea Ait. EARLY GOLDENROD.

Frequent, in woods and on banks, Cecil and New Castle Counties, in both provinces. Mid-July to early Sept.

S. uniligulata (DC) Porter var. **neglecta** (T. & G.) Fern. (*S. neglecta* of manuals. See *Rhodora* 23, 292. 1921.)

Infrequent, in bogs, Coastal Plain, New Castle, Sussex and Dorchester Counties. Sept.

S. odora Ait. SWEET GOLDENROD.

Common throughout, in meadows, woods and dry, open ground. Aug., early Sept.

S. tortifolia Ell.

Infrequent, in Northampton County, where first collected by *Canby*, 8 Oct. 1891 (U). Sept., Oct.

Here reaching its northern limit.

S. fistulosa Mill.

Frequent in clearings, edges of woods, dune hollows and borders of salt marshes, Sussex County; less common southward to Cape Charles. Late Aug., Sept.

S. Elliottii T. & G. var. **ascendens** Fern. See *Rhodora* 38, 215-216. 1936.

Infrequent, in moist woods, southwestern New Castle County; occasional farther south: 8 mi. n. of Ridgely (Ca), *R. R. Tatnall*, 3625, 16 Oct. 1937 (T); $\frac{1}{2}$ mi. w. of Woodenhawk Bridge (S), *R. R. Tatnall*, 2801, 2 Sept. 1935 (T); woods $\frac{3}{4}$ mi. n. of Belle Haven (Ac), *R. R. Tatnall*, 2785, 1 Sept. 1935 (T). Sept., mid-Oct.

Var. **pedicellata** Fern. See Fernald, l. c.

Rare: border of wet pine woods, east of Eastville (No), *Fernald & Long*, 5520, 12 Oct. 1935 (P, T, U). TYPE No.

S. ulmifolia Muhl.

Infrequent, in rocky woods, Piedmont of New Castle and Cecil Counties. Mid-Aug., Sept.

S. rugosa Mill. See Fernald: *Rhodora* 38, 216-224. 1936.

Common in damp woods and fields, and borders of swamps,

Piedmont, and southward on the Coastal Plain to Wicomico County. Late Aug., Sept.

Var. *aspera* (Ait.) Fern.

Similar habitats; frequent in the Piedmont and northern part of the Coastal Plain; also: pine woods $3\frac{1}{2}$ mi. n. of Accomac village (Ac), *Fernald, Long & Fogg*, 5523, 16 Oct. 1935 (P).

Var. *celtidifolia* (Small) Fern.

Rare: woods just n. w. of Vandyke (NC), *Long*, 9 Oct. 1909 (A); dry pine woods near Capeville (No), *Fernald, Long & Fogg*, 5522, 14 Oct. 1935 (P); edge of low woods 2 mi. s. of Painter (Ac), *Fernald, Long & Fogg*, 5521 (P).

S. nemoralis Ait. See *Rhodora* 38, 224-227. 1936. FIELD GOLD-ENROD.

Common in dry, open soil, pine woods, dune sand on the coast, and borders of salt marshes; frequent in the Piedmont, and on the Coastal Plain southward to Talbot and Sussex Counties. Mid-Aug., Sept.

Var. *Haleana* Fern.

A plant of southeastern U. S., in our area known only from Northampton County: sandy pine woods, Eastville, *Fernald & Long*, 5524, 5525; and dry pine woods n. of Capeville, 5526 (U, P).

S. canadensis L.

Infrequent, in rich, open soil, in the Piedmont and northern part of the Coastal Plain. Sept.

S. altissima L.

Frequent in rich, open soil of the Piedmont, and sandy soil of the Coastal Plain southward to northern Accomac County. Sept. to mid-Oct.

S. gigantea Ait. var. *leiophylla* Fern. (*S. serotina* Ait. of manuals. See *Rhodora* 41, 457-459. 1939.)

Common in rich, open ground, Piedmont and adjacent part of the Coastal Plain, in New Castle County. Aug., Sept.

S. rigida L.

Rare in our area: Rock Springs (Ce), probably in serpentine soil, *J. J. Carter*, 16 Sept. 1905 (A).

S. graminifolia (L.) Salisb. BUSHY GOLDENROD.

Common in low ground in the Piedmont of Cecil and New Castle Counties, and on coastal dunes, beaches and salt meadows of Kent (Del.), Sussex and Worcester Counties. Late Aug. to early Oct.

Var. **Nuttallii** (Greene) Fern. See *Rhodora* 10, 92. 1908.

Fields and meadows, from the Fall Line southward to Talbot County (*Earle*). *Sally - Dec 1907*

S. caroliniana (L.) BSP. (*S. minor* of manuals. See Fernald: *Rhodora* 46, 323-330. 1944.)

Rare, in dry, sandy soil: Salisbury (Wi), *Commons*, 2 Sept. 1871 (U); between Quantico (Wi) and Salisbury, *Tidestrom*, 7437, 20 Sept. 1914 (U); near Capeville (No), *Fernald, Long & Fogg*, 5529, Sept. 1937 (P, U).

S. tenuifolia Pursh. See Fernald, l. c.

Common in salt marshes and dune hollows of the Atlantic coast, from southeastern New Castle County to Cape Charles City; also inland, in dry, sandy fields. Late Aug. to mid-Oct.

S. gymnospermoides (Greene) Fern. See *Rhodora* 39, pp. 456, 484, 488. 1937.

One collection: open thicket back of salt marsh, east of Eastville (No), *Fernald & Long*, 5528, 12 Oct. 1935.

Boltonia L'Hér.**B. asteroides** (L.) L'Hér. See Fernald: *Rhodora* 42, 482-487. 1940.)

Rare: rocky island in Susquehanna River, Conowingo, *J. Crawford*, 29 July 1924 (A).

Var. **glastifolia** (Hill) Fern.

Infrequent, in wet ground on the Coastal Plain, Kent (Del.), Sussex, Talbot and Wicomico Counties. Aug., Sept.

Aster L.**A. divaricatus** L. WHITE WOOD ASTER.

Common in rich woodlands of the Piedmont. Sept., Oct.

A. Schreberi Nees.

Local, in moist, shaded ground of the Piedmont: Centreville (NC), *Commons*, 12 Oct. 1873 (A); Mt. Cuba (NC), *J. Crawford*, 24 Sept. 1895 (A); Rock Springs (Ce), *J. J. Carter*, 5 Aug. 1905

(A); Alapocas woods, Wilmington, *R. R. Tatnall*, 568, 25 Sept. 1929 (T); moist bank, Wooddale (NC), *R. R. Tatnall*, 1259, 8 Sept. 1931 (T). Sept.

A. macrophyllus L.

Rare, in woodlands of the Piedmont: Mt. Cuba (NC), *J. Crawford*, 30 Sept. 1896 (U); Porters Bridge (Ce), *Long*, 28548, 11 Aug. 1923 (A).

A. spectabilis Ait.

Rare, in sandy soil of the Coastal Plain: Harrington (K), *Canby*, Sept. 1872 (A); dry soil near Felton (K), *Commons*, 26 Sept. 1873 (A); near Vienna, but in Wicomico County, *Shreve & Jones*, 1113-a, 23 Aug. 1906 (U); "swamp 1 mi. below Taylors Bridge" (NC), *Commons & Tatnall*, 8 Oct. 1897, according to E. Tatnall (MS Catalog).

A. gracilis Nutt.

Frequent in sandy soil of the Coastal Plain; open roadsides, woods, ditches and dune hollows, from southwestern New Castle County to Worcester County. Aug., early Sept.

A. radula Ait. LOW ROUGH ASTER.

Infrequent, in swamps and road ditches on the Coastal Plain of northern New Castle County. Mid-July, Aug.

A. novae-angliae L. NEW ENGLAND ASTER.

Frequent in moist, open ground of both provinces. Early Sept., Oct.

A. concolor L. SILVERY ASTER.

Infrequent, in dry, sandy soil of the Coastal Plain, Kent County, Del., and southward to Cape Charles, preferring the seashore. Sept., mid-Oct.

A. patens Ait. LATE PURPLE ASTER.

Frequent, in dry soil, Piedmont, and Coastal Plain southward to Sussex County. Sept., mid-Oct.

Var. phlogifolius Nees.

Less common than the species, in rocky woods of the Piedmont. Sept., early Oct.

A. undulatus L. WAVY-LEAVED ASTER.

Common in dry woods, Piedmont, and Coastal Plain at least as far south as Caroline and Talbot Counties. Early Sept., mid-Oct.

A. cordifolius L. BLUE WOOD ASTER.

Common in dry woods of the Piedmont. Mid-Sept. to mid-Oct.

A. sagittifolius Wedemeyer.

One collection: near Centreville (NC), *Commons*, 19 Oct. 1876 (A).

A. laevis L. SMOOTH ASTER.

Frequent in dry, rocky woods and on shaded roadsides in the Piedmont; one collection on the Coastal Plain: Laurel (S), *Commons*, 4 Sept. 1880 (A). Early Sept., Oct.

A. concinnus Willd.

Infrequent, in low ground, Piedmont of Cecil County: along Octoraro Creek, *J. J. Carter*, 6 Oct. 1903 and 22 Sept. 1909 (A); and southward on the Coastal Plain to Sussex County. Sept., early Oct.

A. pilosus Willd. (*A. ericoides* L. var. *villosus* T. & G. See Blake: *Rhodora* 32, 138. 1930.)

Seldom collected: railroad ballast along siding, Reibold (NC), *Benner*, 9162, 14 Oct. 1939 (A); meadow $\frac{1}{2}$ mi. s. w. of Easton (Ta), *Earle*, 3999, 1 Oct. 1944 (P).

"Stems conspicuously hairy."

Var. **demotus** Blake. (*A. ericoides* of manuals.)

Common in open ground, from the Pennsylvania line to the Virginia boundary. Mid-Sept. to mid-Oct.

"With subglabrous stems."

A. depauperatus (Porter) Fern.

Rare, or seldom collected: rocky soil east of Rock Springs (Ce), *Long*, 28476, 11 Aug. 1923 (A); barrens $\frac{1}{2}$ mi. n. w. of Rock Springs, *L. F. A. Tanger*, 18 Aug. 1938 (P).

A. ericoides L. (*A. multiflorus* Ait. See Blake, l. c.)

One collection: dry soil near Smyrna (NC), *Commons*, 10 Oct. 1866 (A).

A. dumosus L. BUSHY ASTER.

Infrequent, in sandy soil, Piedmont and Coastal Plain southward to Sussex and Talbot Counties. Mid-Aug. to mid-Oct.

Var. *coridifolius* (Mx.) T. & G.

Rare: Greenbank (NC), *Commons*, 28 Sept. 1882 (A); Georgetown (S), *C. S. Williamson*, 30 Aug. 1908 (A).

A. vimineus Lam.

Infrequent, in moist ground, Coastal Plain, from the Fall Line southward at least to Talbot County (*Earle*). Mid-Aug. to Oct.

A. lateriflorus (L.) Britton.

Infrequent or neglected, Piedmont of New Castle County; also roadside, Elk Neck (Ce), *R. R. Tatnall*, 4110, 19 Oct. 1938 (T). Mid-Sept., Oct.

Var. *pendulus* (Ait.) Burgess.

Frequent on roadsides and in thickets, Piedmont and Coastal Plain of New Castle and Cecil Counties. Late Sept., Oct.

Var. *thyrsoides* (Gray) Sheldon.

Local; salt meadows and marshes of the seacoast: Ocean City (Wo), *Killip*, 7338, 7 Sept. 1920 (U); Fenwick Island (S), *R. R. Tatnall*, 2387, 2418, 2821 (T, A); 3 mi. n. of Bethany Beach (S), *R. R. Tatnall*, 3636, 17 Oct. 1937 (T). Mid-Sept., Oct.

A. paniculatus Lam.

Common on ditch banks and tidal shores, Piedmont, and Coastal Plain of the northern counties; less common southward: 3½ mi. n. w. of Easton (Ta), *Earle*, 3185, 25 Sept. 1940 (P); shore of Broad Creek, n. w. of Portsville (S), *R. R. Tatnall*, 1658, 16 Oct. 1932 (T). Sept., Oct.

Citations of *A. carneus* and *A. salicifolius* in E. Tatnall: MS Catalog, probably belong here.

[**A. Tradescanti L.** (*A. saxatilis* (Fern.) Blanchard. See *Rhodora* 35, 312. 1933.)

A northern species, quite beyond our range. Records in E. Tatnall: MS Catalog, and Catalogue of 1860, should probably be referred to *A. paniculatus*.]

A. novi-belgii L. NEW YORK ASTER.

Common in swamps, ditches and borders of salt marshes, from

the Fall Line southward to Wicomico County; rare farther south: clearing s. of Townsend (No), *Fernald, Long & Fogg*, 5538, 14 Oct. 1935 (P, U). Mid-Sept. to mid-Oct.

Var. litoreus Gray.

Rare: salt marsh 3 mi. n. of Bethany Beach (S), *R. R. Tatnall*, 3219, 19 Oct. 1936 (T, P, G).

A. puniceus L. PURPLE-STEMMED ASTER.

Common in swamps and ditches, throughout New Castle County; rare, or its collection neglected, farther south: Millsboro (S), *Commons*, 25 Sept. 1877 (A); meadow just s. w. of Easton (Ta), *Earle*, 3986, 1 Oct. 1944 (P). Late Aug. to early Oct.

A. prenanthoides Muhl.

Rare: damp, wooded hillside, Newark (NC), *George R. Proctor*, 1233, 16 Sept. 1944 (P). Records from New Castle County, by E. Tatnall (MS Catalog), as "borders of moist woods, frequent," are probably to be referred to *A. puniceus*; no specimens seen.

A. umbellatus Mill. (*Diplopappus umbellatus* Hooker.)

Rather infrequent, in low thickets, Piedmont, and southward on the Coastal Plain to Caroline and Talbot Counties. Mid-Aug. to early Oct.

A. infirmus Mx. (*Diplopappus cornifolius* Less.)

Infrequent, in dry, open woods, Piedmont, and Coastal Plain southward to Kent Co., Md. Late July, Aug.

A. linariifolius L. (*Diplopappus linariifolius* (L.) Greene.) STIFF-LEAVED ASTER.

Frequent, on dry, sandy banks and coastal dunes, Piedmont, and southward to Wicomico County. Early Sept., Oct.

A. nemoralis Ait.

One collection: swamp e. of Frankford (S), "scarce," *Commons*, 10 Sept. 1875 (A).

A. tenuifolius L. LARGE-FLOWERED SALT MARSH ASTER.

Common in salt marshes and estuaries along the coasts of the Atlantic Ocean and Chesapeake and Delaware Bays, between Cape Charles and southeastern New Castle County. Sept., mid-Oct.

A. subulatus Mx. SMALL-FLOWERED SALT MARSH ASTER.

Common in the same habitats as the preceding species, from the Fall Line to the Cape Charles area. Late Aug. to mid-Oct.

Erigeron L. FLEABANE.**E. pulchellus** Mx. (*E. bellidifolius* Muhl.) ROBIN'S PLANTAIN.

Frequent in fields, meadows and woods of the Piedmont; one station on the Coastal Plain: near Greenbackville (Wo), A. V. Smith, in Rhodora 42, 280. 1940. May, early June.

E. philadelphicus L. DAISY FLEABANE.

Frequent in fields and on moist banks of the Piedmont; rare on the Coastal Plain: Long Point, 5½ mi. w. of Easton (Ta), Earle, 1470, 30 May 1937 (P); roadside 1 mi. s. of Choptank Mills (K), R. R. Tatnall, 4544, 1 July 1940 (T). June, early July. *Summary*

E. vernus (L.) T. & G.

One station: swamps, Cape Charles City (No), Canby, June 1894 (D).

E. annuus (L.) Pers. DAISY FLEABANE.

Common weed of fields, roadsides and waste places in the northern part; local southward on the Coastal Plain: 4 mi. n. e. of Trappe (Ta), Earle, 2785, 6 July 1940 (P); ½ mi. s. of Beaverdam (Wo), R. R. Tatnall, 4241, 10 June 1939 (T). June, mid-July.

E. strigosus Muhl. (*E. ramosus* (Walt.) BSP.)

Frequent; fields and roadsides of the Coastal Plain, from the Fall Line to the Virginia boundary. June to mid-July.

E. canadensis L. CANADA FLEABANE.

Common weed in fields and waste places, throughout. Late June to mid-Oct.

E. pusillus Nutt.

Infrequent in sandy soil, especially on coastal dunes, Sussex and Worcester Counties. Mid-Aug., Sept.

Sericocarpus Nees. WHITE-TOPPED ASTER.**S. asteroides** (L.) BSP. (*S. conyzoides* Nees.)

Common in dry woods and thickets, throughout. Late June, July.

S. linifolius (L.) BSP. (*S. solidagineus* Nees.)

Frequent in fields, low ground, and borders of brackish marshes, Piedmont and Coastal Plain, southward to Worcester County. Mid-June to mid-Aug.

Baccharis L. GROUNDSEL TREE.

B. halimifolia L.

Very common in coastal sands and salt marshes, from the Fall Line to Cape Charles; infrequent inland. Sept. to mid-Oct.

Pluchea Cass. MARSH FLEABANE.

P. foetida (L.) DC.

Common in low woods, bogs and dune hollows, Sussex County, and southward to Cape Charles. Aug. to mid-Oct.

P. purpurascens (Sw.) DC. var. **succulenta** Fern. (*P. camphorata* of manuals. See Fernald: *Rhodora* 44, 227-228. 1942.)
SALT MARSH FLEABANE.

Common in salt marshes, and on the shores of Delaware River and Bay, and Atlantic Ocean; less frequent in fresh to brackish estuaries along Chesapeake Bay. Sept. to mid-Oct.

P. camphorata (L.) DC. (*P. petiolata* Cass. See Fernald: *Rhodora* 41, 459. 1939.)

Rare, in fresh-water swamps and on borders of brackish marshes: Cypress Swamp e. of Gumboro (S), *Commons* in 1875 and 1877 (A); Oak Orchard (S), *Fernald & Long*, 4250, 11 Aug. 1934 (P); near Martins Siding (No), *Fernald, Long & Fogg*, 5547, 13 Oct. 1935 (P).

Gifola Cass. COTTON ROSE.

G. germanica (L.) Dumort. HERBA IMPIA.

Rare or overlooked, in dry fields, Piedmont, and Coastal Plain in Sussex County. Apparently not collected since 1895. July to Sept. Nat. from Europe.

Antennaria Gaertner. LADIES' TOBACCO.

A. Parlinii Fern.

Frequent throughout, in dry woods and on open roadsides. Late April, May.

A. plantaginifolia (L.) Richards.

Common on rocky hillsides in the Piedmont, and sandy woods

and roadsides on the Coastal Plain as far south as Accomac County. Mid-April, May.

A. fallax Greene.

Common in fields and rich woods, Piedmont, and Coastal Plain as far south as Caroline and Talbot Counties. Late April to mid-May.

A. neodioica Greene.

Infrequent; upland and Coastal Plain of New Castle and Cecil Counties. Late April, May.

A. solitaria Rydb.

One collection: east bank of Elk River, 2 mi. s. of Elkton (Ce), *H. E. Stone*, 8 May 1927 (A).

A. neglecta Greene.

Frequent in meadows and dry pastures of New Castle and Cecil Counties; rare southward: on a lawn 4 mi. n. w. of Easton (Ta), *Earle*, 201, 20 April 1935 (P). Mid-April to mid-May.

Anaphalis DC. PEARLY EVERLASTING.

A. margaritacea (L.) B. & H. var. *intercedens* Hara. (*A. margaritacea* of manuals. See *Rhodora* 41, 391. 1939.)

Infrequent, in dry fields and on hillsides, in the Piedmont of New Castle County. Also, Elk Neck (Ce), *W. L. Abbott*, 25 Sept. 1923 (A). Mid-July to Sept.

Gnaphalium L. CUDWEED.

G. obtusifolium L. (*G. polycephalum* Mx.)

Common in dry fields, pine woods, meadows and borders of salt marshes, Piedmont province, and southward on the Coastal Plain to Sussex and Worcester Counties. Mid-Aug., Sept.

Var. *Helleri* (Britton) Blake.

Rare: dry pine woods, Eastville (No), *Fernald & Long*, 5550, in 1935 (T).

G. uliginosum L. Low CUDWEED.

Infrequent, in low ground, northern New Castle County. July, Aug.

G. purpureum L. PURPLE CUDWEED.

Common; woods and fields, margins of ponds, and coastal sands, throughout. May, June.

Inula L.**I. Helenium L. ELECAMpane.**

Cultivated, and becoming established in fields and on roadsides, New Castle County. July, Aug. Nat. from Europe.

Polymnia L. LEAF CUP.**P. Uvedalia L. Locally abundant, in rich woods of the Piedmont:**

Alapocas woods, Wilmington, *Canby*, in 1865 (D), and later collectors; roadside at milldam $\frac{1}{2}$ mi. n. of Wooddale (NC), *R. R. Tatnall*, 1934, 27 July 1933 (T, A); rare on the Coastal Plain: moist woods, Woodland Beach (K), *R. R. Tatnall*, 1464, 4 July 1932 (T); edge of woods, 5 mi. s. e. of Easton (Ta), *Earle*, 3057, 3 Sept. 1940 (P); Ocean City (Wo), *Otis*, 29 July 1914 (D); Cape Charles City (No), *Canby*, Sept. 1894 (D); south bank of Old Plantation Creek (No), *R. R. Tatnall*, 1794, 28 May 1933 (T). July, Aug.

Named for Dr. Robert Uvedale, English botanist (1642-1722); see *Rhodora* 47, 196. 1945.

Chrysogonum L.**C. virginianum L.**

One known station: woods above Rowlandsville (Ce), *Long & Bartram*, 1205, 31 May 1913 (A).

Parthenium L.**P. Hysterophorus L. SANTA MARIA.**

A waif on wharves, Wilmington, *E. Tatnall*, 13 Sept. 1897 (A).

Iva L. MARSH ELDER.**I. frutescens L. var. oraria (Bartlett) Fern.**

Common in coastal salt marshes, from central New Castle County to Cape Charles (No). Aug., Sept. *SUSSE*

Ambrosia L. RAGWEED.**A. trifida L. GREAT RAGWEED.**

Very common, in low ground, dry fields and waste places, both provinces. Aug. to mid-Sept.

- ✓ **A. artemisiifolia** L. var. **elaticus** (L.) Descourtils. See *Rhodora* 37, 184-185. 1935. LOW RAGWEED.

Common weed, in waste ground, woods, brackish marshes and dune hollows, Piedmont, and Coastal Plain southward to Accomac County. Aug., Sept. 52504

Xanthium L. COCKLEBUR.

Compare Cronquist: *Rhodora* 47, 403. 1945.

X. spinosum L.

Occasional in waste ground, New Castle County: Wilmington, *Commons*, Sept. 1865 (A); Delaware City, *Commons*, 21 June 1897, (A). Introd. from tropical America.

X. italicum Moretti. (*X. commune* Britton, probably.)

Infrequent on roadsides and river shores, Coastal Plain.

X. chinense Mill.

Frequent; fields, roadsides and city streets, in both provinces.

✓ **X. echinatum** Murr.

Frequent in sandy soil of the Coastal Plain, Sussex County and southward to Cape Charles (No). Chiefly on sea beaches, but occasionally inland.

Heliopsis Pers. OX-EYE.

H. helianthoides (L.) Sweet. (*H. laevis* Pers.)

Frequent in thickets and meadows, Piedmont province; rare on the Coastal Plain: Barlow Branch, 1 mi. s. of Townsend (NC), *R. R. Tatnall*, 1235, 25 July 1931 (T); farm 3½ mi. w. n. w. of Longwoods (Ta), *Earle*, 3748, 6 Sept. 1942 (A). July to mid-Sept.

Eclipta L.

E. prostrata (L.) L. (*E. alba* (L.) Hassk. See Fernald: *Rhodora* 47, 196-197. 1945.)

Infrequent, in waste places and wet ground, throughout the Peninsula. Late Aug. to early Oct.

Rudbeckia L. CONE-FLOWER.

✓ **R. hirta** L. BLACK-EYED SUSAN.

Common in dry fields and meadows, Piedmont, and Coastal

Plain at least as far south as Talbot and Sussex Counties. Mid-June, July. "Introduced with seed from the West."

R. Brittonii Small.

One collection: dooryard, Sharptown (Wi), Otis, 20 July 1914 (D).

R. fulgida Ait.

Infrequent, in dry soil of the Piedmont area, and along the Fall Line. Mid-Aug., Sept.

R. speciosa Wenderoth.

One collection: moist soil, Lewes (S), Commons, 26 Aug. 1895 (A).

R. laciniata L. GOLDEN GLOW.

Frequent in low ground, Piedmont and Coastal Plain southward to Wicomico County. Late July to Sept.

R. triloba L. BROWN-EYED SUSAN.

One collection, probably an escape from cultivation: near Easton (Ta), Earle, 3959, 27 Sept. 1944 (P).

Borrichia Adans. SEA OX-EYE.

B. frutescens (L.) DC.

Infrequent, in shallow salt water and on borders of salt marshes. Mid-July to early Oct.

A southern species, reaching its northern limit in Accomac County.

Helianthus L. SUNFLOWER.

H. annuus L. COMMON SUNFLOWER.

Cultivated, and often escaping to waste ground. Two "starved" specimens, with disks about an inch in diameter, were found on roadside, 1¼ mi. s. w. of Wooddale (NC), just w. of Gap-and-Newport turnpike, R. R. Tatnall, 1641, 17 Sept. 1932, (T, G). July to Sept.

H. angustifolius L. NARROW-LEAVED SUNFLOWER.

Frequent in sandy swamps, meadows and dune hollows, chiefly along the coast, southern New Castle County to Worcester County. Sept., early Oct.

H. grosseserratus Martens.

One collection: roadside between Stanton and Kiamensi (NC), Otis, 10 Sept. 1918 (A).

H. giganteus L. TALL SUNFLOWER.

Frequent in swamps, meadows and coastal dune hollows, Piedmont, and southward on the Coastal Plain to Worcester County. Aug., Sept.

H. divaricatus L.

Infrequent, in dry woods of the Piedmont and the northern part of the Coastal Plain. Mid-July to mid-Oct.

H. strumosus L. PALE-LEAVED SUNFLOWER.

Infrequent, chiefly on rocky, wooded slopes in the Piedmont region of New Castle County. Mid-Aug., Sept.

H. decapetalus L. THIN-LEAVED SUNFLOWER.

Frequent in dry, rocky woods of the Piedmont. Aug., Sept.

H. tuberosus L. JERUSALEM ARTICHOKE.

Cultivated, and abundantly established in meadows and waste places. Sept.

Actinomeris Nutt.

A. alternifolia (L.) DC. (*A. squarrosa* Nutt.)

Infrequent, in rich woods of the Piedmont, and on the Coastal Plain of Cecil County, chiefly along the Susquehanna River, and shores of Elk River and Chesapeake Bay, Sept., early Oct.

Here approaches its northern limit.

Verbesina L. CROWNBEARD.

V. occidentalis (L.) Walt.

Frequent in rich soil, Cape Charles and northward on the Coastal Plain to southern Cecil County. Sept., mid-Oct.

V. virginica L.

One collection: Cape Charles City, Canby, Aug. 1894 (D).

Coreopsis L. TICKSEED.

C. rosea Nutt.

Frequent in wet ground on the Coastal Plain, from southern

New Castle to Sussex and Dorchester Counties. Mid-July to early Sept.

C. tinctoria Nutt.

Escaping from cultivation at Wilmington and Ocean City (Wo).

C. tripteris L.

One collection: rocky islands in the Susquehanna River at Conowingo (Ce), *J. Crawford*, 29 July 1924 (A). Locality now submerged.

Bidens L. BUR MARIGOLD.

B. bidentoides (Nutt.) Britton. (*Coreopsis* Nutt.)

Infrequent; muddy, tidal shores of Delaware River, near Wilmington, and of Elk River: Blair's Shore, 4 mi. s. of Elkton (Ce), *Long*, 57096, 20 July 1941 (A); stony shore of Susquehanna River, at Frenchtown (Ce), *G. R. Proctor*, 1227, 10 Sept. 1944 (P). Sept., early Oct.

B. discoidea (T. & G.) Britton.

Infrequent, in swamps and low ground of the Coastal Plain. Mid-Sept., early Oct.

B. frondosa L. BEGGAR TICKS.

Frequent in low ground, Piedmont and Coastal Plain. Sept., mid-Oct.

B. vulgata Greene. BEGGAR TICKS.

Rare, in northern New Castle County: marshes near Wilmington, *Canby*, 23 Sept. 1899 (D); wet railroad bank, Southwood (NC), *R. R. Tatnall*, 3566, 30 Sept. 1937 (T).

B. comosa (Gray) Wiegand.

Infrequent in damp ground about Wilmington; rare farther south: Townsend (NC), *Canby*, 4 Sept. 1899 (D); roadside $\frac{1}{2}$ mi. s. of Magnolia (K), *R. R. Tatnall*, 1559, 3 Sept. 1932 (T); field 6 mi. n. w. of Easton (Ta), *Earle*, 1662, 19 Sept. 1937 (P). Sept.

B. connata Muhl. SWAMP BEGGAR TICKS.

Infrequent in low grounds, New Castle County; seldom collected farther south: wet sand n. of Ocean City (Wo), *Fogg*, 11406, 12 Sept. 1936 (P); meadow s. w. of Easton (Ta), *Earle*, 3997, 1 Oct. 1944 (P); 2 mi. s. w. of Longwoods (Ta), *Earle*, 4017, 1 Oct. 1944 (P). Sept., early Oct.

B. cernua L. NODDING BUR MARIGOLD.

Infrequent, in low ground, in both provinces of Cecil and New Castle Counties. Aug., mid-Oct.

B. laevis (L.) BSP. (*B. chrysanthemoides* Mx.) LARGE BUR MARIGOLD.

Common in swamps and shallow water of river shores, from the Fall Line to Kent (Del.) and Talbot Counties; rare in Northampton County: moist dune hollows, Savage Neck, *Fernald & Long*, 5560, 11 Oct. 1935 (P); swampy woods s. of Kendall Grove, *Fernald, Long & Fogg*, 5561, 13 Oct. 1935 (P). Aug. to mid-Oct.

B. bipinnata L. SPANISH NEEDLES.

Common; fields, roadsides and waste ground, New Castle and Cecil Counties; infrequent farther south: pine woods near the dunes, Rehoboth (S), *Larsen*, 442, 16 Oct. 1933 (A, P); roadside n. w. of Oyster (No), *Fogg*, 10059, 14 Oct. 1935 (P); woods 2 mi. s. w. of Unionville (Ta), *Earle*, 3735, 5 Sept. 1942 (A). Mid-Aug. to mid-Oct.

B. coronata (L.) Fisch. var. *trichosperma* (Mx.) Fern. (*Coreopsis trichosperma* Mx. See *Fernald: Rhodora* 40, 348-351. 1938.)

Infrequent; swamps, marshes and river shores, from the Fall Line to Sussex County. Late Aug. to early Oct.

Var. *brachyodonta* Fern. (*B. coronata* of manuals.)

Rare: high ground near Newport (NC), *Canby*, 9 Sept. 1899. Cited by *Fernald*, l. c.

B. polylepis Blake. (*Coreopsis involucrata* Nutt.)

Very abundant in Delaware River marshes, Wilmington, and spreading inland to fields and roadsides; occasional southward: field n. of Georgetown (S), *R. R. Tatnall*, 2343, 25 Aug. 1934 (T P); roadside just n. of Oak Hall (Ac), *R. R. Tatnall*, 2792, 2 Sept. 1935 (T, G). Mid-Aug. to mid-Sept.

First appeared in our area, as an introduction from mid-western U. S., about the beginning of this century. See *Canby: Rhodora* 2, 34. 1900.

Cosmos Cav.

C. bipinnatus Cav.

Cultivated, and often spontaneous in waste places in northern

Delaware; also, edge of pine woods s. of Kendall Grove (No), *Fernald, Long & Fogg*, 5562, 13 Oct. 1935 (P). Introd. from Mexico.

Galinsoga Ruiz & Pavon.

G. ciliata (Raf.) Blake. (*G. parviflora* of manuals.)

Common in waste ground, northern New Castle County; rare southward: Little Creek (K), *Larsen*, 391, 11 Oct. 1933 (A, P); $\frac{3}{4}$ mi. s. of Longwoods (Ta), *Earle*, 3547, 10 May 1942 (P). Sept., mid-Oct. Adv. from tropical America.

Madia Molina. TARWEED.

M. sativa Mol.

Introduced with grass seed on a lawn in Wilmington, re-appearing the following season, but not thereafter: *R. R. Tatnall*, 31 July 1925 (T, P, A, G). Native of California.

Helenium L. SNEEZEWEED.

H. nudiflorum Nutt. PURPLE-HEADED SNEEZEWEED.

Infrequent, in meadows and on roadsides of the Piedmont, and southward on the Coastal Plain: roadside 3 mi. s. of Kenton (K), *R. R. Tatnall*, 1456, 4 July 1932 (T, P); 4 mi. n. w. of Easton (Ta), *Earle*, 3387, 5 July 1941 (P). July to early Sept.

H. autumnale L. YELLOW-HEADED SNEEZEWEED.

Common in swamps, meadows, brackish marshes and dune hollows, from the Fall Line southward to Sussex County. Mid-Aug. to early Oct.

H. parviflorum Nutt.

One collection: river swamps, Seaford (S), *Commons*, 31 Aug. 1882 (A). Adv. from southeastern U. S.

Achillea L. YARROW.

A. Millefolium L.

Frequent; fields, roadsides and coastal sands. June to Aug.

Anthemis L. CHAMOMILE.

A. Cotula L.

Frequent in waste places. July, Aug. Nat. from Europe.

A. arvensis L. WILD CHAMOMILE.

Common weed of pastures and cultivated ground, from the Fall Line southward to the Virginia line. Mid-May to July. Adv. from Europe.

Matricaria L.**M. matricarioides** (Less.) Porter. (*M. suaveolens* (Pursh) Buchenau.) PINEAPPLE-WEED.

Waif at Old Town Point (K), on east shore of St. Jones' Creek, Mrs. W. S. Corkran, 1 June 1936 (T). Nat. from the Pacific slope.

Chrysanthemum L.**C. Leucanthemum** L. var. *pinnatifidum* Lecoq. & Lamotte. WHITE or OX-EYE DAISY.

Common weed in fields and meadows. June to Oct.

C. Parthenium (L.) Bernh. FEVERFEW.

Cultivated, and escaping to waste ground about Wilmington. June. Introd. from Europe.

Tanacetum L. TANSY.**T. vulgare** L. COMMON TANSY.

Escaped from gardens to roadsides near dwellings, in the northern counties. July, Aug.

Artemisia L. WORMWOOD**A. Abrotanum** L. SOUTHERNWOOD.

One collection, as an escape from garden: roadside, Cooch's Mill (NC), *Commons*, 8 Sept. 1891 (A). Introd. from Europe.

A. gnaphalodes Nutt. (*A. ludoviciana* of manuals.) WESTERN MUGWORT.

Rare, in dry ground: near Seaford (S), *E. Tatnall*, Aug. 1892 (D); Townsend (NC), *Commons & Tatnall*, 21 Sept. 1894 (D, A).

A. vulgaris L. COMMON MUGWORT.

In waste ground at Wilmington: Jackson & Sharp's, *Commons* in 1897 (A); along Greenhill Ave. at Sixth Street, *R. R. Tatnall*, 4669, 3 Sept. 1940 (T, A). Nat. from Europe.

A. Stelleriana Bess. BEACH WORMWOOD.

Frequent on coastal sands, Sussex County. Mid-May, June. Introd. from northeastern Asia.

A. biennis Willd.

Collected in waste ground at New Castle by *Commons*, in 1866 and 1869 (A, D). Introd. from west of the Alleghenies.

A. annua L.

Weed in waste places about Wilmington. Late July to Sept. Nat. from the Old World.

A. pontica L. ROMAN WORMWOOD.

Rare, New Castle County: waste ground, Centreville (NC), *Commons*, in 1876 (A); roadside, Townsend (NC), *Commons*, 8 June 1896 (A). Adv. from central Europe.

Arnica L.

A. acaulis (Walt.) BSP.

Infrequent; sandy woods and roadsides on the Coastal Plain, Cecil and New Castle Counties. June.

Erechtites Raf. FIREWEED.

E. hieracifolia (L.) Raf., (typical). See Fernald: *Rhodora* 19, 24-27. 1917.)

Frequent, in clearings, thickets, meadows and dune hollows, from the Fall Line southward to Sussex County. Early June to mid-Sept.

Var. *intermedia* Fern. See Fernald: l. c.

Frequent, in same habitats as the species.

Cacalia L. INDIAN PLANTAIN.

C. suaveolens L. (*Synosma suaveolens* (L.) Raf.)

Known only from alluvial soil along the Susquehanna River, in Cecil County: 1 mi. s. s. w. of Rowlandsville, *R. R. Tatnall*, 4708, 30 Oct. 1940, and later collections (T, G, A). Through Oct.

C. Muhlenbergii Fern. (*C. reniformis* Muhl. of manuals.)

One collection: Elkton (Ce), *Thomas Seal*, Aug. 1852 (A).

C. atriplicifolia L. INDIAN PLANTAIN.

Infrequent, in pastures, thickets and open woods of the Piedmont province; rare on the Coastal Plain: along outlet of Purnell Pond, n. e. of Snow Hill (Wo), *True*, 30 June 1928 (P); woods ½ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4358, 10 Aug. 1939 (T). Mid-July to early Sept.

Senecio L. GROUNDSEL. RAGWORT.**S. vulgaris** L. COMMON GROUNDSEL.

Infrequent, in waste ground, Sussex County, and southward to Cape Charles. Mid-April, May. Nat. from Europe.

S. aureus L. GOLDEN RAGWORT.

Common, in wet meadows, swamps and low woods, chiefly in the Piedmont province; rather rare on the Coastal Plain: woods 1 mi. e. of Coldwell Corners (NC), *Long*, 48434, 16 May 1936 (A); wet roadside 1 mi. s. w. of Kenton (K), *R. R. Tatnall*, 2464, 20 April 1935 (T, G), and 3259, 29 April 1937 (T, P); 1¼ mi. e. of Wattsville (Ac), *R. R. Tatnall*, 4441, 28 April 1940 (T, G). Late April, May.

Var. *gracilis* (Pursh) Wood.

Infrequent, in meadows of the Piedmont; also near Cooch's Mill (NC), *Commons*, 29 May 1896 (A).

S. pauperculus Mx. var. *Balsamitae* (Muhl.) Fern.

Infrequent, on serpentine and open, sandy soil, Piedmont, and Coastal Plain near the Fall Line. May.

S. Smallii Britton.

Infrequent, in serpentine barrens of New Castle and Cecil Counties. A specimen from pine woods s. of Bay View (No), seems to belong here: *R. R. Tatnall*, 1791, 28 May 1933 (T, P). Late May to early July.

S. tomentosus Mx. WOOLLY RAGWORT.

Frequent in dry, sandy soil, pine woods, ditches and wet meadows of the Coastal Plain, from southeastern New Castle County to Accomac County. May to early July.

Arctium L. BURDOCK.**A. minus** (Hill) Bernh. COMMON BURDOCK.

Common weed in waste ground of the northern counties; also,

field 4 mi. w. n. w. of Easton (Ta), *Earle*, 3609, 27 July 1942 (A).
June to Aug.

Carduus L. PLUMELESS THISTLE.

C. nutans L. MUSK THISTLE.

One collection: cultivated ground $1\frac{1}{4}$ mi. n. of Millington (Ke),
R. R. Tatnall, 3829, 7 June 1938 (T, G).

Cirsium Hill. THISTLE.

**C. vulgare (Savi) Airy-Shaw. (*C. lanceolatum* of manuals.) BULL
THISTLE.**

Infrequent, in fields and waste places of northern New Castle
County; rare, or seldom collected, southward: grassy slope 3 mi. n. e.
of Easton (Ta), *Earle*, 3484, 1 Sept. 1941 (P). Aug. to early Oct.
Nat. from Europe.

**C. horridulum Mx. (*C. spinosissimum* (Walt.) Scop.) YELLOW
THISTLE.**

Infrequent, in meadows and dune hollows, along the Fall Line,
and southward to Northampton County. Mid-May, June.

C. discolor (Muhl.) Spreng. FIELD THISTLE.

Frequent in pastures, meadows and thickets, Piedmont area;
occasional on the Coastal Plain: thicket $1\frac{1}{2}$ mi. s. of Bohemia
Mills (Ce), *R. R. Tatnall*, 3493, 20 Aug. 1937 (T); meadow 3 mi. n.
of Easton (Ta), *Earle*, 3485, 1 Sept. 1941 (P, A). Mid-Aug., Sept.

C. altissimum (L.) Spreng. SPINELESS THISTLE.

Infrequent; fields and woods in the valley of Red Clay Creek
(NC), and doubtless elsewhere. Late Aug., Sept.

C. virginianum (L.) Mx.

One collection: southeast of Georgetown (S), *C. S. Williamson*,
30 Aug. 1908 (A).

C. muticum Mx. SWAMP THISTLE.

Infrequent, in swamps and low thickets, on the Coastal Plain
area of New Castle and Cecil Counties. Mid-Aug. to early Oct.

C. pumilum (Nutt.) Spreng. PASTURE THISTLE.

Infrequent, in pastures of the Piedmont province. July.

C. arvense (L.) Scop. CANADA THISTLE.

Frequent weed in fields and waste places of both provinces.
Mid-July to early Oct.

Var. *integrifolium* Wimm. & Grab.

Occasional, in similar habitats: Rock Springs (Ce), *J. J. Carter*, 5 July 1910 (A); 2½ mi. s. w. of Summit Bridge (NC), *F. M. Jones & R. R. Tatnall*, 5020, 3 June 1942 (T, A).

Onopordum L. SCOTCH THISTLE.**O. Acanthium** L.

One collection: waste ground, Centreville (NC), *Commons*, 11 Aug. 1874 (A). Nat. from Europe.

Centaurea L. STAR THISTLE.**C. Jacea** L.

Occasional, in waste ground: Coldwell Corners (NC), *R. R. Tatnall*, 904, 30 May 1930 (T, G); roadside bank, Augustine Cutoff, Wilmington, *R. R. Tatnall*, 5032, 29 July 1942 (T, A); roadside 1.2 mi. w. of Newark (NC), *G. R. Proctor*, 1125, 12 Aug. 1944 (P). Nat. from Europe.

C. Cyanus L. CORN FLOWER. BACHELOR'S BUTTON.

Frequent escape from cultivation, in fields and on roadsides.
Late May to early June. Introd. from Europe.

C. nigra L. KNAPWEED.

Occasional, in fields and on roadsides: Chestertown (Ke), *E. G. Vanatta*, 4 Aug. 1904 (A); railroad bank, Wilmington, *R. R. Tatnall*, 1185, 18 June 1931 (A, G, T); Shallcross Ave. near Van Buren Street, Wilmington, *R. R. Tatnall*, 5063, 22 Aug. 1943 (T). Nat. from Europe.

C. maculosa Lam.

Occasional, in sandy fields and on roadsides, Coastal Plain: near Hurlock (Do), *R. R. Tatnall*, 391, 29 June 1929 (T, P, G); 4 mi. e. n. e. of Felton (K), *R. R. Tatnall*, 1882, 18 June 1933 (T, G); roadside just s. of Frederica (K), *R. R. Tatnall*, 2753, 31 Aug. 1935 (T). Adv. from Europe.

Cichorium L. CHICORY.

C. Intybus L.

Common weed of fields and roadsides, from the Pennsylvania boundary to Talbot and Sussex Counties. July to Oct.

Krigia Schreb. DWARF DANDELION.

K. virginica (L.) Willd.

In dry soil; infrequent in the Piedmont of New Castle County; common in pine woods and open, sandy soil, throughout the Coastal Plain. May, June. *5-11-1909*

K. biflora (Walt.) Blake. (*Cynthia virginica* (L.) D. Don. See Blake: Rhodora 17, 137. 1915.)

Rare, in moist ground, New Castle County: "New Castle County," *E. Tatnall*, 1843 (T); moist meadows near Newark, *Commons*, 21 May 1890 (A); Townsend, *E. Tatnall*, June 1890 (D). Mid-May, mid-June.

Hypochaeris L. CAT'S-EAR.

H. radicata L.

Infrequent, in lawns and fields, usually in sandy soil, from the Fall Line to southern Accomac County. Late May, June. Nat. from Europe. *Healy - Dunes*

Leontodon L. HAWKBIT.

L. autumnalis L. FALL DANDELION.

One known collection: waste ground in Wilmington, *Canby*, Aug. 1891 (D). Nat. from Europe.

Picris L.

P. hieracioides L.

One collection: Ocean City (Wo). *J. J. Carter*, 13 Aug. 1909 (A). Adv. from Europe.

Tragopogon L. GOAT'S BEARD.

T. porrifolius L. SALSIFY. OYSTER PLANT.

An infrequent escape from cultivation in New Castle County; also, ? near Lewes (S), *Nuttall*, June 1809 (A); roadside 2 mi. s. of Princess Anne (So), *R. R. Tatnall*, 1150-A, 31 May 1931 (T). Introd. from Europe.

Chondrilla L.

✓ **C. juncea** L. SKELETON-WEED.

Rather frequent, and abundant where it occurs, in dry, sandy fields, from Worcester County northward to central New Castle County. Late June to Aug. Nat. from Europe.

Taraxacum Ludwig. DANDELION.

See Fernald: Rhodora 35, 369-383. 1933.

T. palustre (Lyons) Lam. & DC. var. **vulgare** (Lam.) Fern. (*T. officinale* Weber.) COMMON DANDELION.

Common weed in open ground, practically throughout our area. April to late autumn. Nat. from Europe.

T. laevigatum (Willd.) DC. (*T. erythrospermum* Andr.) RED-SEEDED DANDELION.

Infrequent; fields and roadsides of the Piedmont; rare on the Coastal Plain: roadside, Choptank Mills (K), *Otis*, 15 May 1924 (A). Nat. from Europe.

Sonchus L. SOW THISTLE.**S. arvensis** L.

Rare in our area: edge of marsh, Wilmington, *Commons*, 16 Oct. 1900 (A); ditch bank 4 mi. n. w. of Easton (Ta), *Earle*, 3399, 5 July 1941 (P)

Var. **glabrescens** (Guenth.) Grab. & Wimm. (*S. uliginosus* Bieb.)

Infrequent, in fields and on serpentine soil, New Castle and Cecil Counties. Mid-July to Sept. Introd. from Europe.

✓ **S. oleraceus** L.

Infrequent in waste places about Wilmington; also, roadside, Chincoteague Island (Ac), *True*, 27 June 1928 (P). Nat. from Europe.

S. asper (L.) Hill. SPINY-LEAVED SOW THISTLE.

Rather frequent, about Wilmington, and southward to Accomac County, in fields, waste ground, and sands of the seashore. May to July. Nat. from Europe.

Lactuca L. LETTUCE.

L. Scariola L.

Occasional in dry, open ground: vacant lot, Wilmington, *R. R. Tatnall*, 1485, 19 July 1932 (T); roadside 4 mi. n. w. of Easton (Ta), *Earle*, 2293, 3 Sept. 1939 (P). Adv. from Europe.

Var. *integrata* Gren. & Godr.

Infrequent, in waste places about Wilmington and Marshallton (NC). Late June to Sept. Nat. from Europe.

L. saligna L.

Rare: on serpentine soil at roadside, $\frac{1}{2}$ mi. e. of Mt. Cuba (NC), *R. R. Tatnall*, 4688, 28 Sept. 1940 (T, A, P, G); roadside 4 mi. w. n. w. of Easton (Ta), *Earle*, 2297, 3 Sept. 1939 (P). Adv. from Europe.

L. canadensis L. var. typica Wiegand. (*Rhodora* 22, 10. 1920.)

Infrequent in fields and on roadsides, chiefly of the Piedmont. Late June into Aug. *Sumner - Meade*

Var. *latifolia* O. Ktze.

Frequent, in fields, woods and dry, open sandy places, practically throughout our area.

Var. *integrifolia* (Bigel.) Gray. (*L. sagittifolia* Ell.)

Infrequent; roadsides and waste places, from the Pennsylvania boundary to Accomac County. Late June to early Sept.

L. villosa Jacq.

Infrequent, on wooded slopes in the Piedmont area; less common in sandy soil of the Coastal Plain: shore of White Swan Lake, 2 m. s. e. of Chesapeake City (Ce), *R. R. Tatnall*, 3480, 14 Aug. 1937 (T); Woodland Beach (K), *H. R. Baker*, 29 Aug. 1932 (UD). Aug., early Sept.

L. floridana (L.) Gaertn.

Frequent in rich soil of the Piedmont; less common in sandy woods of the Coastal Plain southward to Sussex and Talbot Counties; one station in northern Accomac County: woods $1\frac{3}{4}$ mi. e. of Wattsville, *R. R. Tatnall*, 4348, 10 Aug. 1939 (T). Late July to early Sept.

L. spicata (Lam.) Hitchc.

Infrequent, in low ground, Piedmont, and just south of the Fall Line. Late Aug., Sept.

Pyrrhopappus DC. FALSE DANDELION.**P. carolinianus** (Walt.) DC.

Rare, in dry fields in the southern part of the Peninsula: Millsboro (S), *Commons*, 18 June 1875 (A); Cape Charles City (No), *Canby*, July 1894 (D); Chincoteague Island (Ac), *True*, 27 June 1928 (P).

A southern species, reaching its northeastern limit in Sussex County.

Crepis L. HAWK'S BEARD.**C. capillaris** (L.) Wallr.

Rare: grassy bank, Marshallton (NC), *Otis*, 27 June 1916 (A); roadside, 1¼ mi. n. e. of Kenton (K), *R. R. Tatnall*, 1455, 4 July 1932, and 1867, 8 June 1933 (T, A, P, G). Adv. from Europe.

Prenanthes L. RATTLESNAKE ROOT.**P. autumnalis** Walt. (*P. virgata* Mx.)

Infrequent, in sandy soil, Sussex, Worcester and Wicomico Counties. Sept., Oct.

P. alba L.

Rare, on wooded slopes, in or near the Piedmont province: along Octoraro Creek, north of Cecil Paper Mill (Ce), *R. R. Tatnall*, 218, 23 Sept. 1928 (T, A); slope of Iron Hill, west of Cooch's Bridge (NC), *Benner*, 9508, 5 Oct. 1940 (A). Sept., early Oct.

P. serpentaria Pursh. LION'S FOOT.

Infrequent, in dry woods and thickets of the Coastal Plain, from the Fall Line to Talbot and Sussex Counties. Sept., mid-Oct.

P. trifoliolata (Cass.) Fern. GALL-OF-THE-EARTH.

Infrequent, in woods, Piedmont, and Coastal Plain southward to Cape Charles City. Mid-Aug., Sept.

P. altissima L.

Infrequent, in rich woodlands of the Piedmont province. Sept., early Oct.

Hieracium L. HAWKWEED.**H. pratense** Tausch.

A rather recent introduction from farther north, becoming frequent; fields and roadsides, sometimes on serpentine soil, Piedmont and Coastal Plain of New Castle and Cecil Counties. Late May, June. Nat. from Europe.

H. venosum L. RATTLESNAKE-WEED.

Common in dry, open woods, from the Pennsylvania line southward to Sussex and Talbot Counties; one station in Accomac County: edge of pine woods, Wachapreague, *R. R. Tatnall*, 2628, 3 June 1935 (T). Mid-May, June (Oct.)

H. paniculatum L.

Frequent in dry, open woods of the Piedmont province. Mid-July to mid-Sept.

H. scabrum Mx.

Frequent in dry woods of the Piedmont; occasional on the Coastal Plain: roadside near Ogletown (NC), *R. R. Tatnall*, 29 Aug. 1929 (T); near Delaney's Chapel (NC), *Canby*, 5 Sept. 1898 (D); Long Point, 5½ mi. w. of Easton (Ta), *Earle*, 2269, 13 Aug. 1939, (P). Mid-Aug. to early Oct.

H. Gronovii L.

Common throughout; open woods, roadsides, meadows, dune hollows, and borders of salt marshes. Aug. to mid-Oct.

[H. marianum Willd.

All of the Peninsula specimens which have been determined as *H. marianum* appear to be *H. Gronovii*.]

SYNOPSIS OF ORDERS AND FAMILIES

Plants represented by a variety only are counted as species.

PTERIDOPHYTA

	Number of			Number of	
	Species	Vars.		Species	Vars.
<i>Filicales</i>			<i>Lycopodiales</i>		
Ophioglossaceae	4	2	Lycopodiaceae	7	
Osmundaceae	3	1	Selaginellaceae	2	
Schizaeaceae	1		Isoetaceae	3	1
Polypodiaceae	33	4	<i>Equisetales</i>		
			Equisetaceae	4	

SPERMATOPHYTA

GYMNOSPERMAE

<i>Coniferales</i>	
Pinaceae	12

ANGIOSPERMAE

MONOCOTYLEDONES

<i>Pandanales</i>		<i>Xyridales</i>	
Typhaceae	2	Eriocaulaceae	4
Sparganiaceae	2	Xyridaceae	4
<i>Najadales</i>		Commelinaceae	5
Potamogetonaceae	16	Bromeliaceae	1
Zosteraceae	1	Pontederiaceae	3
Scheuchzeriaceae	2	<i>Liliales</i>	
Najadaceae	3	Juncaceae	26
Alismaceae	13	Liliaceae	48
Vallisneriaceae	4	Haemodorumaceae	2
Hydrocharitaceae	1	Dioscoreaceae	1
<i>Graminales</i>		Amaryllidaceae	2
Gramineae	224	Iridaceae	7
Cyperaceae	214	<i>Orchidales</i>	
<i>Arales</i>		Orchidaceae	34
Araceae	6		
Lemnaceae	6		

Synopsis of Orders and Families

DICOTYLEDONES

Choripetalae

		Number of		Number of	
		Species	Vars.	Species	Vars.
<i>Piperales</i>				Anonaceae	1
Saururaceae	1			Menispermaceae	1
				Berberidaceae	4
<i>Salicales</i>				Lauraceae	3 1
Salicaceae	21 1			<i>Papaverales</i>	
				Papaveraceae	7
<i>Myricales</i>				Fumariaceae	4
Myricaceae	5			Cruciferae	50 2
				Capparidaceae	2
<i>Juglandales</i>				Resedaceae	1
Juglandaceae	7			<i>Sarraceniales</i>	
				Sarraceniaceae	1
<i>Fagales</i>				Droseraceae	2
Betulaceae	10				
Fagaceae	26			<i>Rosales</i>	
				Podostemaceae	1
<i>Urticales</i>				Crassulaceae	4
Urticaceae	16 3			Saxifragaceae	8
				Hamamelidaceae	2
<i>Santalales</i>				Platanaceae	1
Santalaceae	1			Rosaceae	84 3
Loranthaceae	1			Leguminosae	100 5
				<i>Geraniales</i>	
<i>Aristolochiales</i>				Linaceae	6
Aristolochiaceae	2 1			Oxalidaceae	5
				Geraniaceae	8
<i>Polygonales</i>				Rutaceae	3
Polygonaceae	42 1			Simarubaceae	1
				Meliaceae	1
<i>Chenopodiales</i>				Polygalaceae	12 1
Chenopodiaceae	23 2			Euphorbiaceae	23
Amaranthaceae	10			Callitrichaceae	3
Phytolaccaceae	1				
Nyctaginaceae	1			<i>Sapindales</i>	
Aizoaceae	2			Limnanthaceae	1
				Anacardiaceae	6
<i>Caryophyllales</i>				Aquifoliaceae	5
Caryophyllaceae	43 2			Celastraceae	3
Portulacaceae	2			Staphyleaceae	1
				Aceraceae	5 2
<i>Ranunculales</i>				Sapindaceae	1
Ceratophyllaceae	1			Balsaminaceae	2
Nymphaeaceae	6				
Ranunculaceae	33				
Magnoliaceae	2				

Synopsis of Orders and Families

Choripetalae—Continued

	Number of Species Vars.			Number of Species Vars.	
<i>Rhamnales</i>			<i>Opuntiales</i>		
Rhamnaceae	3	1	Cactaceae	2	
Vitaceae	6				
<i>Malvales</i>			<i>Myrtales</i>		
Tiliaceae	1		Thymelaeaceae	1	
Malvaceae	13		Lythraceae	6	
			Melastomaceae	3	
<i>Violales</i>			Onagraceae	19	2
Ternstroemiaceae	1		Haloragidaceae	7	
Hypericaceae	19	1			
Elatinaceae	2		<i>Umbellales</i>		
Cistaceae	10	1	Araliaceae	5	
Violaceae	26	1	Umbelliferae	38	1
Passifloraceae	2		Cornaceae	5	2

Gamopetalae

	Number of Species Vars.			Number of Species Vars.	
<i>Ericales</i>			<i>Labiatae</i>	65	4
Ericaceae	36	6	Solanaceae	20	
			Scrophulariaceae	54	4
<i>Primulales</i>			Lentibulariaceae	14	1
Plumbaginaceae	2		Orobanchaceae	4	
Primulaceae	14		Bignoniaceae	3	
			Acanthaceae	4	
<i>Ebenales</i>			Phrymaceae	1	
Ebenaceae	1				
Styracaceae		1	<i>Plantaginales</i>		
			Plantaginaceae	8	1
<i>Gentianales</i>					
Oleaceae	6		<i>Rubiales</i>		
Loganiaceae	2		Rubiaceae	25	3
Gentianaceae	20		Caprifoliaceae	18	
Apocynaceae	6	4	Valerianaceae	3	
Asclepiadaceae	14	2	Dipsacaceae	2	
<i>Polemoniales</i>			<i>Campanulales</i>		
Convolvulaceae	15	1	Cucurbitaceae	2	
Polemoniaceae	7		Campanulaceae	3	
Hydrophyllaceae	4		Lobeliaceae	9	1
Boraginaceae	16		Compositae	237	26
Verbenaceae	8				

Synopsis of Orders and Families

SUMMARY

	<i>Species</i>	<i>Varieties</i>
Pteridophyta	57	8
Spermatophyta	2053	140
Gymnospermae	12	
Angiospermae	2041	140
Monocotyledones	631	54
Dicotyledones	1410	86
Choripetalae	787	33
Gamopetalae	624	53
Number of species listed	2111	
Number of varieties listed	148	
		<hr/>
Total	2259	

BIBLIOGRAPHY OF BOTANY OF THE PENINSULA.

- TATNALL, EDWARD (?); "Catalogue of the Phaenogamous and Filicoid Plants of New Castle County, Delaware," 1844.
- TATNALL, EDWARD: "Catalogue of the Phaenogamous and Filicoid Plants of New Castle County, Delaware." Wilmington Institute, 1860.
- CANBY, W. M.: "Notes of Botanical Visits to the lower part of Delaware and the Eastern Shore of Maryland." Proc. Acad. Nat. Sci. Phila. 1864, pp. 16-19.
- CHICKERING, J. W.: "A Season's Botanizing," Field and Forest 3, 154-155. June 1878. (Visit to Salisbury and Ocean City, Md.)
- CANBY, W. M.: (Notes on certain trees of the Delaware peninsula.) Bot. Gazette 6, 270-271. Oct. 1881.
- SARGENT, C. S.: (Forests of Delaware and Maryland.) Tenth Census U. S. 9, 511. 1884.
- RUSBY, H. H.: "A Botanical Excursion to Assateague Bay." Bull. Torr. Bot. Club 18, 250-255. Aug. 1891.
- CANBY, W. M.: "Coreopsis involucrata on the Atlantic Coast." Rhodora 2, 34. 1900.
- KEARNEY, T. H.: (Northern limits of austro-riparian plants.) Contr. U. S. Nat. Herb. 5, 450-457. 1901.
- CURRAN, H. M.: "The Forests of Cecil County." Maryland Geological Survey, Cecil County, pp. 295-314. 1902.
- SARGENT, C. S.: "The Genus Crataegus in New Castle County, Delaware." Bot. Gazette 35, 99-110. Feb. 1903.
- SHULL, GEORGE H.: "Geographic Distribution of Isoetes saccharata." Bot. Gazette 36, 187-202, with map. 1903.
- CLARK, HUBERT LYMAN: "Notes on Maryland Plants." Rhodora 6, 176-177. Aug. 1904. Reports four extensions of range.
- KELLER, I. A. AND S. BROWN: "Handbook of the Flora of Philadelphia and Vicinity." Philadelphia Botanical Club, 1905.
- HARPER, R. M.: "Centers of Distribution of Coastal Plain Plants." Science 25, 539-541. 1907. Comments on the absence of the characteristic pine-barren plants from Maryland and Delaware.
- STERRETT, W. D.: "Report on Forest Conditions in Delaware." Del. Coll. Agric. Exp. Sta. Bull. 82. Dec. 1908.
- WILLIAMSON, C. S.: "Notes on the Flora of Central and Southern Delaware." Torrey 9, 160-166. 1909.
- HARPER, R. M.: "Car-window Notes of the Vegetation of the Delaware Peninsula and Southern Virginia." Torrey 9, 317-226. 1909.
- SHREVE, CHRYSLER, BLODGETT AND BESLEY: "The Plant Life of Maryland." Baltimore, 1910. This work contains a list of plants collected and observed throughout the state, comprising about 1400 species and varieties. Notes on distribution, appended to each species, make it clear which of these are attributed to the "Eastern Shore."

Bibliography

- HARPER, R. M.: "A Forest Reconnaissance of the Delaware Peninsula." *Journal of Forestry* 17, 546-555. 1919.
- JONES, FRANK MORTON: "Delaware," in "Naturalists' Guide to the Americas," pp. 398-401. The Williams & Wilkins Co., 1926.
- HAMILTON, C. C.: "Maryland," in "Naturalists' Guide to the Americas," pp. 401-410. The Williams & Wilkins Co., 1926.
- SMALL, JOHN K.: "Peninsula Delmarva." *Jour. N. Y. Bot. Gard.* 30, 62-71. 1929. A brief account of "a short reconnaissance" of the Peninsula, in the course of which "a collection of the rarer and more interesting plants encountered was made for the herbarium of the New York Botanical Garden." Gives lists of typically southern species not found farther north than Delaware or neighboring Cape May, N. J. Four illustrations.
- REDMOND, PAUL J.: "A Flora of Worcester County, Maryland." 1932. Contribution from the biological laboratory of the Catholic University of America. An annotated check-list, based on two seasons of collecting, and hence somewhat lacking in completeness.
- SMALL, JOHN K.: "Ferns of the Vicinity of New York." 1935. Illustrated.
- FERNALD, M. L.: "Midsummer Vascular Plants of Southeastern Virginia." *Rhodora* 37, 378-413, and 423-454. 1935; also "Plants from the Outer Coastal Plain of Virginia." *Rhodora* 38, 376-404, and 414-452. 1936. These papers record many species collected in Accomac and Northampton Counties, Va.
- TATNALL, R. R.: "*Conium maculatum* in the Brandywine Valley." *Bartonia* No. 17, 23. 1936.
- TABER, W. S.: "Delaware Trees." State Forestry Department, Dover, 1937. Finely illustrated by photographs and line drawings by the author, who is state forester.
- BEAVEN, G. F. AND H. J. OOSTING: "Pocomoke Swamp; A Study of a Cypress Swamp on the Eastern Shore of Maryland." *Bull. Torrey Bot. Club* 66, 367-389, June, 1939. A valuable ecological paper, including a list of several hundred species of plants collected in and about the swamp along the Pocomoke River in southeastern Maryland. Illustrated.
- SMITH, A. V.: "Some Noteworthy Plants recently Found in the Coastal Plain of Maryland and Delaware." *Rhodora* 41, 111. 1939.
- SMITH, A. V.: "Some Plants recently found in the Coastal Plain of Maryland." *Rhodora* 42, 277-280. 1940.
- TATNALL, R. R.: "Nuttall's Plant Collections in Southern Delaware." *Bartonia* No. 20, 1-6. 1940.
- TATNALL, R. R.: "*Dirca palustris* in New Castle County, Delaware." *Bartonia* No. 20, 24. 1940.
- WHERRY, E. T.: "Guide to Eastern Ferns." Science Press Printing Co. Second edition, 1942. Illustrated.
- REED, CLYDE F.: "Distribution of Ferns and Fern Allies in Maryland, Delaware and the District of Columbia." *Bull. Nat. Hist. Soc. of Maryland*, XIII, No. 3, 1943.
- MOLDENKE, HAROLD N.: "Contribution to our Knowledge of the Wild and Cultivated Flora of Delaware." *Torreyia* 45, 106-109, Dec. 1945. Record of 66 species observed or collected throughout the state.

INDEX

Scientific names of Families are in CAPITALS. Synonyms are in *italics*. Specific names, when there are only a few in a genus, are usually omitted.

- Abutilon, 173
- Acacia, Rose, 152
- Acalypha, 166
- ACANTHACEAE, 240
- Acanthus Family, 240
- Acer, 170
- ACERACEAE, 170
- Acerates, 211
- Achillea, 274
- Acnida, 112
- Acorus, 74
- Actaea, 124
- Actinomeris, 271
- Adam-and-Eve, 93
- Adder's Mouth, 93
- Adder's Tongue, 1
- Adiantum, 3
- Adlumia, 127
- Aegopodium, 191
- Aeschynomene, 152
- Aethusa, 193
- Agalinis*, 235
- Agastache, 220
- Agrimonia, 145
- Agrimony, 145
- Agropyron, 25
- Agrostemma, 117
- Agrostis, 29
- Ailanthus, 163
- Aira, 28
- AIZOACEAE, 113
- Alchemilla*, 145
- Alder, 99
 - Black, 169
 - Seaside, 99
- Aletris, 85
- Alfalfa, 151
- Alisma, 17
- ALISMACEAE, 15
- Allium, 82
- Alnus, 99
- Alopecurus, 30
- Althaea, 174
 - Shrubby, 174
- Alum Root, 136
- Amaranth, Thorny, 112
- AMARANTHACEAE, 112
- Amaranthus, 112
- AMARYLLIDACEAE, 87
- Amaryllis Family, 87
- Ambrosia, 268
- Amelanchier, 139
- American Brooklime, 234
- Amianthium, 81
- Ammannia, 184
- Ammannia*, 183
- Ammophila, 29
- Amorpha, 151
- Amphicarpa, 159
- Amphicarpum, 45
- Amygdalus, 147
- ANACARDIACEAE, 168
- Anacharis, 17
- Anagallis, 204
- Anaphalis, 267
- Anchistea, 3
- Andropogon, 46
- Anemone, 123
 - Rue, 122
 - Tall, 123
 - Wood, 123
- Anemonella, 122
- Angelica, 194
 - Hairy, 194
- Angle-pod, 211
- ANONACEAE, 125
- Antennaria, 266
 - fallax, 267
 - neglecta, 267
 - neodioica, 267
 - Parlinii, 266
 - plantaginifolia, 266
 - solitaria, 267
- Anthemis, 274
- Anthoxanthum, 34
- Anychia*, 113, 114
- Aphanes, 145
- Aphyllon, 240
- Apios, 158
- Aplectrum, 93
- APOCYNACEAE, 208
- Apocynum, 209
- Apple, 138
 - (Apple)
 - Crab, 138
 - of Peru, 228
 - Thorn, 229
- AQUIFOLIACEAE, 169
- Aquilegia, 123
- Arabidopsis, 131
- Arabis, 133
- ARACEAE, 73
- Arachis, 152
- Aralia, 188
- ARALIACEAE, 188
- Arbutus, Trailing, 198
- Arctium, 277
- Arenaria, 115
- Arethusa, 91
- Argemone, 127
- Arisaema, 73
- Aristida, 32
- Aristolochia, 105
- ARISTOLOCHIACEAE, 105
- Armoracia, 132
- Arnica, 276
- Aronia, 138
- Arrhenatherum, 28
- Arrow Grass, 15
- Arrow-head, 15
- Arrow-wood, 247
 - Downy, 247
- Artemisia, 275
 - Abrotanum, 275
 - annua, 276
 - biennis, 276
 - gnaphalodes, 275
 - ludoviciana*, 275
 - pontica, 276
 - Stelleriana, 276
 - vulgaris, 275
- Artichoke, Jerusalem, 271
- Arum, Arrow, 74
 - Family, 73
- Arundo, 24
- Asarum, 105
- ASCLEPIADACEAE, 209
- Asclepias, 209
 - amplexicaulis, 210

Index

(Asclepias)

Cornuti, 210
exaltata, 210
incarnata, 210
lanceolata, 210
obtusifolia, 210
phytolaccoides, 210
purpurascens, 210
quadrifolia, 211
rubra, 210
syriaca, 210
tuberosa, 209
variegata, 210
verticillata, 211

Ascyrum, 175

Ash, 204

Black, 205
 Green, 205
 Prickly, 163
 Red, 205
 White, 204

Asimina, 125

Asparagus, 84

Aspen, 95, 96

Asperugo, 216

Asperula, 242

Asphodel, Bog, 81

False, 81

Aspidium, 5

Asplenium, 3

Asplenium, 4

Aster, 260

Blue Wood, 262

Bushy, 263

carneus, 263

concinus, 262

concolor, 261

cordifolius, 262

depauperatus, 262

divaricatus, 260

dumosus, 263

ericoides, 262

ericoides, 262

Golden, 256

gracilis, 261

infirmus, 264

laevis, 262

Late Purple, 261

lateriflorus, 263

linariifolius, 264

Low Rough, 261

macrophyllus, 261

multiflorus, 262

nemoralis, 264

(Aster)

New England, 261

New York, 263

novae-angliae, 261

novi-belgii, 263

paniculatus, 263

patens, 261

pilosus, 262

prenanthoides, 264

puniceus, 264

Purple-stemmed, 264

radula, 261

sagittifolius, 262

salicifolius, 263

Salt Marsh, 264, 265

saxatilis, 263

Schreberi, 260

Silvery, 261

Smooth, 262

spectabilis, 261

Stiff-leaved, 264

subulatus, 265

tenuifolius, 264

Tradescanti, 263

umbellatus, 264

undulatus, 262

vimineus, 263

Wavy-leaved, 262

White-topped, 265

White Wood, 260

Athyrium, 4

Atriplex, 111

Aureolaria, 235

Avena, 28

Avens, 143

Axonopus, 36

Azalea, Clammy, 196

Smooth, 196

Purple, 196

Azalea, 196, 197

Baccharis, 266

Bachelor's Button, 279

Bacopa, 232

Bacopa, 232

Bald Cypress, 11

Rush, 53

Balloon Vine, 171

Balm, 223

Horse, 227

Balsam, 171

Balsam-apple, Wild, 249

BALSAMINACEAE, 171

Bamboo, (See Sasa, 18)

Baneberry, 124

Baptisia, 148

Barbarea, 132

Barberry, 125

Barley, 26

Bartonia, 207

Basil Thyme, 223

Bassia, 111

Basswood, 173

Bay, Red, 126

Sweet, 124

Bayberry, 96

Beach Heather, 178

Plum, 146

Wormwood, 276

Bead Fern, 7

Bean, Indian, 240

Kidney, 159

Soja (Soy), 159

Wild, 158

Beak Rush, 57

Beard-tongue, 231

Bedstraw, 243

Coast, 244

Hairy, 243

Northern, 243

Rough, 244

Sweet-scented, 244

Yellow, 243

Beech, 99

Beech Drops, 239

Beggar Ticks, 272

Swamp, 272

Beggar's Lice, 216

Belamcanda, 88

Bellflower, 250

Marsh, 250

Bellwort, 82

Benzoin, 126

BERBERIDACEAE, 125

Berberis, 125

Berchemia, 172

Bergamot, 222

Wild, 222

Betony, Wood, 237

Betula, 98

BETULACEAE, 98

Bidens, 272

bidentoides, 272

bipinnata, 273

cernua, 273

chrysanthemoides,

273

comosa, 272

Index

(Bidens)

connata, 272
 coronata, 273
coronata, 273
 discoidea, 272
 frondosa, 272
 laevis, 273
 polylepis, 273
 vulgata, 272

Bignonia, 240

BIGNONIACEAE, 240

Bindweed, 212

Black, 108

Field, 212

Birch, Black, 98

Gray, 99

River, 98

Sweet, 98

White, 99

Yellow, 98

Bird-foot Violet, 179

Bird's-foot Trefoil, 151

Birthwort Family, 105

Bishop's-weed, Mock,
 191

Bittersweet, 227

Climbing, 170

Black Alder, 169

Gum, 195

Haw, 248

Henbane, 229

Blackberry, 143

Bush, 144

Cut-leaved, 144

High Bush, 144

Sand, 144

Blackberry Lily, 88

Black-eyed Susan, 269

Bladder Nut, 170

Bladderwort, 237

Blazing Star, 81, 255

Blephilia, 222

Bloodroot, 126

Bloodwort Family, 87

Bluebell Family, 249

Blueberry, 200

Black, 201

High, 201

Low, 201

Low Sweet, 201

New Jersey, 201

Blue-bottle, 84

Blue Cohosh, 125

Curls, 219

(Blue)

Flag, 88

Hearts, 236

Tangle, 200

Bluets, 245

Blue-eyed Grass, 88

Bocconia, 126

Boehmeria, 104

Bog Asphodel, 81

Fern, 6

Boltonia, 260

Boneset, 252, 254

Upland, 254

BORAGINACEAE, 215

Borrichia, 270

Botrychium, 1

Bouncing Bet, 118

Bowman's Root, 138

Box Elder, 171

Brachyelytrum, 32

Bracken, 3

Brandywine Cowslip,
 217

Brasenia, 120

Brassica, 130

Brier, Green, 86

Briza, 22

BROMELIACEAE, 77

Bromus, 18

Brooklime, American,
 234

Broom, Scotch, 149

Broom-rape, 239, 240

Clover, 240

Broussonetia, 103

Brown-eyed Susan, 270

Buchnera, 236

Buckbean, 208

Buckthorn, 172

Buckwheat, 109

Climbing False, 109

Bugbane, 124

Bugle Weed, 225

Bugloss, Viper's, 217

Bulbostylis, 53

Bullace Plum, 146

Bulrush, 54

Canby's, 55

Great, 55

River, 55

Salt Marsh, 55

Bunch Flower, 82

Bupleurum, 192

Burdock, 277

Bur Marigold, 272

Large, 273

Nodding, 273

Burnet, 145

Saxifrage, 192

Bur-reed, 12

Bush Clover, 155

Honeysuckle, 246

Butter-and-eggs, 230

Buttercup, 120

Creeping, 121

Swamp, 121

Tall, 122

Butterfly Pea, 159

Spurred, 159

Butterfly Weed, 209

Butternut, 97

Buttonbush, 245

Buttonweed, 245

Buttonwood, 137

Button Snakeroot, 189

Cacalia, 276

CACTACEAE, 183

Cactus Family, 183

Cakile, 129

Calamagrostis, 29

Calamintha, 223

Callicarpa, 218

CALLITRICHACEAE, 168

Callitriche, 168

Calopogon, 91

Caltha, 123

Camelina, 129

Camellia Family, 175

Campanula, 250

CAMPANULACEAE, 249

Campion, 117

Bladder, 118

Red, 117

Starry, 118

Campsis, 240

Camptosorus, 4

Cannabis, 103

Caper Family, 134

CAPPARIDACEAE, 134

CAPRIFOLIACEAE, 246

Capsella, 129

Cardamine, 132

Cardinal Flower, 250

Cardiospermum, 171

Carduus, 278

Carex, 60

abscondita, 66

Index

(Carex)

aestivaliformis, 68
 alata, 63
albolutescens, 63
 albursina, 66
 amphibola, 67
anceps, 66
 angustior, 62
 annectens, 61
 arenaria, 60
 artitecta, 64
 atlantica, 62
 Barrattii, 70
 Bicknellii, 63
 blanda, 67
 brevior, 63
 bromoides, 62
 bullata, 73
 Bushii, 69
 Buxbaumii, 70
 canescens, 62
 caroliniana, 69
 cephalophora, 650
 Collinsii, 71
 communis, 64
 comosa, 72
 complanata, 69
 conoidea, 67
 convoluta, 60
 crinita, 71
crinita, 71
cristata, 64
 cristatella, 64
 Davisii, 68
 debilis, 68
 digitalis, 66
 Emmonsii, 64
 Emoryi, 71
 exilis, 62
 festucea, 63
festucea, 63
 folliculata, 72
 Frankii, 72
 gigantea, 73
 glaucescens, 70
 glaucoidea, 68
 gracilescens, 67
 gracillima, 68
gracillima, 68
grandis, 73
 granularis, 67
 grisea, 67
grisea, 67
 gynandra, 71

(Carex)

Harperi, 64
Haydenii, 81
heterosperma, 66
hirsuta, 69
 hirsutella, 69
 hirtifolia, 65
 hormathodes, 63
hormathodes, 63
 Howeii, 62
 incomperta, 62
 inflata, 72
 interior, 62
 intumescens, 73
 Joorii, 70
lacustris, 72
 laevivaginata, 61
 lanuginosa, 69
 laxiculmis, 66
 laxiflora, 66
laxiflora, 66
 Leavenworthii, 61
 leptalea, 64
 limosa, 70
littoralis, 70
 Longii, 63
longirostris, 68
 lupuliformis, 73
 lupulina, 73
 lurida, 73
makrokoala, 70
 Meadii, 65
 mesochorea, 61
mirabilis, 63
 Mitchelliana, 71
 Muhlenbergii, 61
muricata, 61
 nigromarginata, 64
 normalis, 63
 oblita, 68
 oligocarpa, 67
 pedunculata, 65
 pennsylvanica, 64
plana, 61
 platyphylla, 66
 polymorpha, 66
 prasina, 68
ptychocarpa, 66
pubescens, 65
 radiata, 60
 retroflexa, 60
 Richii, 63
 riparia, 72
 rosea, 60

(Carex)

rostrata, 72
 rugosperma, 65
 scabrata, 70
scirpoides, 62
 scoparia, 63
 seorsa, 62
 silicea, 63
 sparganioides, 61
 spicata, 61
 Sprengelii, 68
 squarrosa, 72
sterilis, 62
 stipata, 61
 straminea, 63
striata, 69
 striatula, 66
 stricta, 71
strictior, 71
 styloflexa, 66
subulata, 71
 Sullivantii, 65
 Swanii, 69
 tetanica, 65
tetanica, 65
 tonsa, 65
 torta, 71
 tribuloides, 64
 trichocarpa, 72
 trisperma, 62
 typhina, 72
typhinoides, 72
uberior, 61
 umbellata, 65
umbellata, 65
varia, 64
venusta, 68
 vesicaria, 72
 vestita, 70
 virescens, 69
virescens, 69
 vulpinoidea, 61
vulpinoidea, 61
 Walteriana, 69
 Willdenowii, 64
 Carpet Weed, 113
 Carpinus, 98
 Carrion Flower, 86
 Carrot, 194
 Carya, 97
 CARYOPHYLLACEAE, 113
 Cashew Family, 168
 Cassena, 169
 Cassia, 148

Index

- Castalia*, 119
Castanea, 99
Castilleja, 236
 Castor Oil Plant, 166
Catalpa, 240
Catchfly, 117
 Night-flowering, 117
 Sleepy, 117
 Sweet William, 117
Catnip, 220
Cat's-ear, 280
Cat-tail, 12
Caulophyllum, 125
Ceanothus, 172
Cedar, Red, 12
 White, 11
Celandine, 127
 CELASTRACEAE, 170
Celastrus, 170
Celtis, 102
Cenchrus, 44
Centaurea, 279
Centaurium, 206
Centauray, 206
 Large Marsh, 206
 Square-stemmed, 206
Centella, 190
Centrosema, 159
Centunculus, 204
Cephalanthus, 245
Cephalaria, 249
Cerastium, 116
 CERATOPHYLLACEAE, 119
Ceratophyllum, 119
Cercis, 148
Chaenorrhinum, 230
Chaerophyllum, 190
Chamaecyparis, 11
Chamaedaphne, 198
Chamaelirium, 81
Chamomile, 274
 Wild, 275
Cheat, 19
Cheeses, 174
Cheilanthes, 3
Chelidonium, 127
Chelone, 231
 CHENOPODIACEAE, 109
Chenopodium, 109
 album, 110
 ambrosioides, 109
 Berlandieri, 110
 Boscianum, 110
 (Chenopodium)
 Botrys, 110
 glaucum, 110
 hybridum, 110
 murale, 110
 polyspermum, 110
 Vulvaria, 110
Cherry, 146
 Choke, 146
 European Bird, 147
 Ground, 228
 Mahaleb, 147
 Sour, 147
 Sweet, 147
 Wild Black, 146
 Wild Red, 146
 Winter, 228
Chess, 18, 19
Chestnut, 99
Chicasa Plum, 146
Chickweed, 115
 Common, 116
 Great, 115
 Jagged, 116
 Mouse-ear, 116
 Nodding, 116
Chickweed Wintergreen, 203
Chicory, 280
Chimaphila, 195
China-berry Tree, 163
Chinquapin, 100
Chionanthus, 205
Chokeberry, 138, 139
Chondrilla, 281
Chrysanthemum, 275
Chrysogonum, 268
Chrysopsis, 256
Chrysosplenium, 136
Cichorium, 280
Cicuta, 191
Cimicifuga, 124
Cinna, 30
Cinquefoil, 142
Circaea, 187
Cirsium, 278
 altissimum, 278
 arvense, 279
 discolor, 278
 horridulum, 278
 lanceolatum, 278
 muticum, 278
 pumilum, 278
 spinosissimum, 278
 (Cirsium)
 virginianum, 278
 vulgare, 278
 CISTACEAE, 178
Cladium, 59
Claytonia, 118
Cleavers, 243
Cleistes, 91
Clematis, 123
 Purple, 123
 White, 123
Cleome, 134
Clethra, 195
Climbing Dogbane, 208
 Hemp-weed, 255
Clitoria, 159
Clover, 150
 Alsike, 150
 Bush, 155
 Crimson, 150
 Hop, 150
 Large Yellow, 150
 Low Hop, 150
 Rabbit-foot, 150
 Red, 150
 White, 150
Club-moss, 7
Cockle, 117
 Corn, 117
Cocklebur, 269
Cockspur Thorn, 140
Coffee, Wild, 247
Cohosh, Blue, 125
Colic Root, 85
Collinsonia, 227
Columbine, 123
Comandra, 104
Comfrey, 216
 Wild, 215
Commelina, 76
 COMMELINACEAE, 76
 COMPOSITAE, 251
 Composite Family, 251
Comptonia, 97
Cone-flower, 269
Conium, 191
Conopholis, 239
Conringia, 130
 CONVULVACEAE, 211
Convolvulus, 212
Coral Root, 93
Corallorhiza, 93
Coreopsis, 271
Coreopsis, 272, 273

Index

- Coriander, 193
- Coriandrum, 193
- Corn Cockle, 117
 - Flower, 279
 - Salad, 248
- CORNACEAE, 194
- Cornus, 194
- Coronopus, 129
- Corrigiola, 114
- Corydalis, 127
- Corylus, 98
- Cosmos, 273
- Cotton Grass, 56
 - Rose, 266
- Cottonwood, 96
- Cowbane, Spotted, 191
- Cow-herb, 118
- Cow Parsnip, 193
 - Pea, 159
 - Wheat, 237
- Cowslip, Brandywine, 217
 - Virginia, 217
- Crab Apple, 138
- Cranberry, 200
 - Large, 201
- Crane-fly Orchis, 93
- Cranesbill, 162
- CRASSULACEAE, 135
- Crataegus, 140
 - apposita*, 141
 - arcana*, 141
 - arcuata*, 141
 - Canbyi, 140
 - coccinea*, 141
 - cordata*, 141
 - Crus-galli, 140
 - cuprea*, 141
 - delawarensis*, 141
 - disperma, 140
 - foetida, 141
 - intricata, 141
 - macrosperma, 141
 - monogyna, 142
 - nemoralis*, 141
 - Oxyacantha, 142
 - parvifolia*, 140
 - pausiaca*, 140
 - pedicellata, 141
 - pennsylvanica, 141
 - Pennypackeri*, 140
 - phaenopyrum, 141
 - populifolia*, 141
 - populnea*, 141
- (Crataegus)
 - pruinosa*, 141
 - punctata*, 140
 - stolonifera*, 141
 - straminea*, 141
 - Tatnalliana, 141
 - tenella*, 141
 - tomentosa*, 142
 - uniflora*, 142
 - viridis*, 140
- Creepers, Trumpet, 240
 - Virginia, 172
- Crepis, 283
- Cress, Bitter, 132
 - Field, 128
 - Garden, 128
 - Marsh, 131
 - Mouse-ear, 131
 - Penny, 128
 - Rock, 133
 - Spring, 132
 - Wart, 129
 - Water, 131
 - Winter, 132
- Cross-vine, 240
- Crotalaria, 149
- Croton, 165
- Crotonopsis, 165
- Crowfoot, 120
 - Cursed, 121
 - Small-flowered, 121
 - Stiff Water, 121
 - Wood, 121
- Crownbeard, 271
- CRUCIFERAE, 128
- Cryptotaenia, 192
- Cubelium*, 179
- Cucumber, 249
 - One-seeded, 249
- CUCURBITACEAE, 249
- Cud-weed, Low, 267
 - Purple, 268
- Culver's Root, 234
- Cunila, 225
- Cuphea, 184
 - Clammy, 184
- Curly-grass Family, 2
- Currant, 136
 - Indian, 247
 - Wild Black, 136
- Cuscuta, 213
 - arvensis*, 213
 - campestris*, 213
 - compacta*, 213
- (Cuscuta)
 - Coryli, 213
 - Epilinum, 213
 - Gronovii, 213
 - obtusiflora*, 213
 - pentagona, 213
 - Polygonorum, 213
- Cut-grass, Rice, 35
- Cymbalaria, 230
- Cynodon, 33
- Cynoglossum, 215
- Cynosurus, 24
- Cynthia*, 280
- CYPERACEAE, 47
- Cyperus, 47
 - compressus*, 48
 - cylindricus*, 50
 - dentatus*, 48
 - diandrus*, 48
 - dipsaciformis*, 50
 - Engelmanni, 49
 - erythrorhizos*, 49
 - esculentus*, 49
 - ferax*, 49
 - filicinus*, 48
 - filiculmis*, 50
 - flavescens*, 48
 - flavescens*, 48
 - Grayii, 50
 - hystericinus*, 49
 - lancastriensis*, 49
 - microdontus*, 48
 - Nuttallii*, 48
 - odoratus*, 49
 - ovularis*, 50
 - Plukenetii, 50
 - poaeformis*, 48
 - polystachyos*, 48
 - pseudovegetus*, 48
 - refractus*, 49
 - retrofractus*, 49
 - retrofractus*, 50
 - retorsus*, 50
 - rivularis*, 48
 - rotundus*, 48
 - sabulosus*, 48
 - strigosus*, 49
 - tenuifolius*, 47
 - virens*, 48
- Cypress, Bald, 11
 - Standing, 214
- Cypripedium, 88
- Cystopteris, 6
- Cytisus, 149

Index

- Dactylis, 24
 Daisy, Ox-eye, 275
 White, 275
 Dame's Violet, 131
 Dandelion, 281
 Dwarf, 280
 Fall, 280
 False, 283
 Red-seeded, 281
 Danthonia, 29
 Darnel, 27
 Datura, 229
 Daucus, 194
 Day Flower, 76
 Day Lily, 83
 Dead Nettle, 221
 Decodon, 184
 Deerberry, 200
 Deergass, 184
 Delphinium, 124
 Dennstaedtia, 7
 Dentaria, 123
Deringa, 192
 Deschampsia, 28
 Desmodium, 153
 acuminatum, 153
 bracteosum, 153
 canadense, 154
 canescens, 153
 ciliare, 155
 Dillenii, 154
 glabellum, 153
 grandiflorum, 153
 humifusum, 153
 laevigatum, 154
 lineatum, 155
 marilandicum, 155
 nudiflorum, 153
 obtusum, 155
 ochroleucum, 153
 paniculatum, 154
 pauciflorum, 153
 rigidum, 154
 rotundifolium, 153
 sessilifolium, 154
 strictum, 154
 viridiflorum, 154
 Dewberry, 144
 Swamp, 144
Dianthera, 240
 Dianthus, 118
 Dicentra, 127
Dicksonia, 7
 Diervilla, 246
 Digitaria, 35
 Diodia, 245
 Dioscorea, 87
 DIOSCOREACEAE, 87
 Diospyros, 204
 Diplachne, 33
Diplopappus, 264
 Diplotaxis, 130
 DIPSACEAE, 249
 Dipsacus, 249
 Dirca, 183
Discopleura, 191
 Distichlis, 24
 Ditch Grass, 14
 Stonecrop, 135
 Dittany, 225
 Dock, Bitter, 106
 Curled, 105
 Swamp, 105
 Dodder, Flax, 213
 Hazel, 213
 Dogbane, 208, 209
 Climbing, 208
 Hemp, 209
 Spreading, 209
 Dog's-tooth Violet, 83
 Dogtail, 24
 Dogwood, 194
 Flowering, 194
 Silky, 194
 Dog Fennel, 252
 Violet, 182
 Door Weed, 106
 Draba, 128
 Dragon Head, False, 221
 Dropseed, 32
 Drosera, 134
 ROSEACEAE, 134
 Dryopteris, 5
Dryopteris, 6
 Duchesnea, 142
 Duckmeat, 74
 Duckweed, 74
 Dulichium, 50
 Dutchman's Breeches,
 127
 Dwarf Dandelion, 280
 Ginseng, 189
 EBENACEAE, 204
 Ebony Family, 204
 Echinochloa, 43
 Echinocystis, 249
Echinodorus, 17
 Echium, 217
 Eclipta, 269
 Eel Grass, 15
 Eglantine, 145
 ELATINACEAE, 177
 Elatine, 177
 Elder, 248
 Box, 171
 Marsh, 268
 Red-berried, 248
 Elecampane, 268
 Eleocharis, 50
 acicularis, 51
 albida, 53
 ambigens, 52
 calva, 52
 Engelmanni, 51
 equisetoides, 51
 flavescens, 51
 halophila, 52
 intermedia, 52
 melanocarpa, 53
 microcarpa, 53
 obtusa, 51
 olivacea, 51
 palustris, 52
 parvula, 51
 quadrangulata, 50
 Robbinsii, 51
 rostellata, 51
 simplex, 53
 Smallii, 52
 tenuis, 52
 Torreyana, 53
 tortilis, 53
 tricostata, 52
 tuberculosa, 53
 Elephantopus, 252
 Elephant's-foot, 252
 Eleusine, 33
 Ellisia, 215
 Elm, 102
 Slippery, 102
 White, 102
 Elodea, 17
 Elymus, 25
 Enchanter's Nightshade,
 187
 Epifagus, 239
 Epigaea, 198
 Epilobium, 186
Epipactis, 92
 Equisetaceae, 9
 Equisetum, 9

Index

Eragrostis, 22
 capillaris, 22
 cilianensis, 23
 hirsuta, 23
 hypnoides, 22
 megastachya, 23
 mexicana, 23
 minor, 23
 multicaulis, 23
 neomexicana, 23
 pectinacea, 23
 pectinacea, 23
 peregrina, 23
 pilosa, 22
 poaeoides, 23
 Purshii, 23
 refracta, 23
 spectabilis, 23
 Erechtites, 276
 Erianthus, 45
 ERICACEAE, 195
 Erigeron, 265
 annuus, 265
 bellidifolius, 265
 canadensis, 265
 philadelphicus, 265
 pulchellus, 265
 pusillus, 265
 ramosus, 265
 strigosus, 265
 vernus, 265
 ERIOCAULACEAE, 75
 Eriocaulon, 75
 Eriophorum, 56
 Erodium, 163
 Eryngium, 189
 Eryngo, 189
 Erysimum, 131
 Erythraea, 206
 Erythronium, 83
 Eulalia, 45
 Eupatorium, 252
 album, 253
 aromaticum, 254
 capillifolium, 252
 coelestinum, 255
 dubium, 252
 fistulosum, 252
 hyssopifolium, 253
 leucolepis, 253
 maculatum, 252
 perfoliatum, 254
 pubescens, 254
 purpureum, 252

(Eupatorium)
 purpureum, 252
 resinosum, 254
 rotundifolium, 254
 rotundifolium, 254
 rugosum, 254
 serotinum, 253
 sessilifolium, 254
 Torreyanum, 253
 trifoliatum, 252
 urticaefolium, 254
 verbenaeifolium, 254
 Euonymus, 170
 Euphorbia, 166
 corollata, 167
 Cyparissias, 167
 Darlingtonii, 167
 falcata, 168
 Helioscopia, 167
 hexagona, 167
 Ipecacuanhae, 167
 Lathyrus, 168
 maculata, 167
 maculata, 167
 marilandica, 167
 nutans, 167
 Peplus, 167
 polygonifolia, 166
 Preslii, 167
 purpurea, 167
 supina, 167
 EUPHORBIACEAE, 165
 Evening Primrose, 186
 Everlasting, Pearly, 267
 Everlasting Pea, 158
 Evonymus, 170
 Exochorda, 138
 FAGACEAE, 99
 Fagopyrum, 109
 Fagus, 99
 Fall Dandelion, 280
 Witch Grass, 36
 False Asphodel, 81
 Dandelion, 283
 Dragon Head, 221
 Flax, 129
 Indigo, 148, 151
 Mermaid, 168
 Featherfoil, 202
 Fennel, 192
 Dog, 252
 Fern, Bead, 7
 Beech, 2

(Fern)
 Bog, 6
 Brittle, 6
 Chain, 3
 Christmas, 4
 Cinnamon, 2
 Cliff, 7
 Climbing, 2
 Flowering, 1
 Grape, 1
 Hay-scented, 7
 Interrupted, 1
 Lady, 4
 Lip, 3
 Maidenhair, 3
 Marsh, 6
 New York, 6
 Rattlesnake, 1
 Royal, 1
 Sensitive, 7
 Shield, 5
 Sweet, 97
 Walking, 4
 Wood, 5
 Fescue, 20
 Festuca, 20
 Festuca, 19
 Fetter Bush, 198
 Feverfew, 275
 Field Bindweed, 212
 Cress, 128
 Garlic, 83
 Madder, 242
 Figwort, 230
 Fimbristylis, 54
 Fireweed, 186, 276
 Flag, 88
 Sweet, 74
 Flax, 160
 False, 129
 Fleabane, 265
 Canada, 265
 Daisy, 265
 Marsh, 266
 Salt Marsh, 266
 Floating Heart, 208
 Floerkea, 168
 Flower-of-an-Hour, 175
 Fly Poison, 81
 Foeniculum, 192
 Fool's Parsley, 193
 Forget-me-not, 216
 Four-o'clock Family,
 113

Index

- Foxglove, False, 235
 - Yellow, 235
- Foxtail, Barbed, 44
 - Giant, 44
 - Green, 44
 - Meadow, 30
 - Water, 31
 - Yellow, 44
- Fragaria, 142
- Fraxinus, 204
- French Mulberry, 218
- Fringe Tree, 205
- Froelichia, 113
- Frog Fruit, 218
- Frog's Bit, 18
- Frostweed, 178
- Fuirena, 56
- Fumaria, 128
- FUMARIACEAE, 127
- Fumitory, 128
 - Climbing, 127
- Galactia, 160
- Galingale, 47
- Galinsoga, 274
- Galium, 243
 - Aparine, 243
 - asprellum, 244
 - bermudense, 244
 - boreale, 243
 - circaezans, 243
 - Claytoni, 244
 - concinnum, 244
 - hispidulum, 244
 - lanceolatum, 243
 - Mollugo, 243
 - obtusum, 244
 - pilosum, 243
 - tinctorium, 244
 - trifidum, 244
 - triflorum, 244
 - uniflorum, 244
 - verum, 243
- Gall-of-the-Earth, 283
- Garden Cress, 128
- Garlic, 82, 83
- Gaultheria, 198
- Gaura, 187
- Gaylussacia, 199
- Gelsemium, 205
- Gentian, 206
 - Closed, 207
 - Fringed, 206
 - Horse, 247
- (Gentian)
 - Pine Barren, 207
 - Soapwort, 207
 - Striped, 207
- Gentiana, 206
 - Andrewsii, 207
 - Catesbaei, 207
 - clausa, 207
 - crinita, 206
 - ochroleuca, 207
 - parvifolia, 207
 - Porphyrio, 207
 - Saponaria, 207
 - villosa, 207
- GENTIANACEAE, 206
- GERANIACEAE, 162
- Geranium, 162
- Gerardia, 235
 - decemloba, 236
 - Holmiana, 236
 - Large Purple, 235
 - linifolia, 235
 - maritima, 235
 - obtusifolia, 236
 - parvifolia, 236
 - purpurea, 235
 - racemulosa, 236
 - setacea, 236
 - tenuifolia, 236
- Gerardia, 235
- Germander, 218
- Geum, 143
- Giant Foxtail, 44
 - Hyssop, 220
- Gifola, 266
- Gilia, 214
- Gillenia, 138
- Gill-over-the-Ground, 220
- Ginger, Wild, 105
- Ginseng, 188, 189
 - Dwarf, 189
- Glaucium, 127
- Glaux, 204
- Gleditsia, 147
- Glyceria, 20
- Glycine, 159
- Gnaphalium, 267
- Goat's Beard, 280
 - Rue, 152
- Golden Alexanders, 192
 - Aster, 256
 - Club, 74
 - Glow, 270
- (Golden)
 - Saxifrage, 136
 - Seal, 124
- Goldenrod, 256
 - Bushy, 260
 - Early, 258
 - Field, 259
 - Seaside, 257
 - Showy, 257
 - Sweet, 258
 - White, 257
 - Woodland, 256
- Gonolobus, 211
- Goodyera, 92
- Gooseberry, 136
- Goosefoot, 109
 - Maple-leaved, 110
 - Oak-leaved, 110
 - Stinking, 110
- Gourd, 249
- Goutweed, 191
- GRAMINEAE, 18
- Grape, 172
 - Chicken, 173
 - Fox, 172
 - Frost, 173
 - Summer, 173
- Grape Hyacinth, 84
- Grass, 18
 - Alkali, 20
 - Barnyard, 43
 - Beach, 29
 - Beard, 46
 - Bent, 29
 - Bermuda, 33
 - Black, 78
 - Black Oat, 32
 - Blue, 21
 - Blue-eyed, 88
 - Blue-joint, 29
 - Bottle-brush, 26
 - Brome, 18
 - Canary, 35
 - Catchfly, 35
 - Cord, 34
 - Cotton, 56
 - Crab, 35
 - Crested Wheat, 25
 - Ditch, 14
 - Downy Oat, 29
 - Eel, 15
 - Fall Witch, 36
 - Foxtail, 30
 - Gama, 47

Index

- (Grass)
 Goose, 33
 Hair, 28, 30, 32
 Hungarian, 44
 Indian, 47
 Johnson, 47
 June, 27
 Kentucky Blue, 21
 Lace, 22
 Love, 22
 Manna, 20
 Meadow, 21
 Mountain Rice, 32
 Mouse-tail, 19
 Needle, 32
 Oat, 28, 29
 Orchard, 24
 Panic, 37
 Plume, 45
 Poverty, 33
 Quack, 25
 Quaking, 22
 Rabbit's-foot, 31
 Ravenna, 45
 Reed, 29
 Rye, 26
 Salt Reed, 34
 Sand, 25
 Sickie, 27
 Slough, 34
 Spike, 24
 Squirrel-tail, 26
 Star, 87
 Sweet Vernal, 34
 Tall Oat, 28
 Tape, 17
 Triple-awned, 32
 Velvet, 29
 White, 35
 Wild Oat, 29
 Witch, 41
 Wood Reed, 30
 Yellow-eyed, 76
 Grass Pink, 91
 Gratiola, 232
Gratiola, 233
 Great Laurel, 197
 Green Brier, 86
 Dragon, 73
 Violet, 179
 Grindelia, 255
 Gromwell, 217
 Corn, 217
 False, 217
- Ground Cedar, 8
 Cherry, 228
 Ivy, 220
 Pine, 8
 Groundsel, 277
 Tree, 266
 Gum, Black, 195
 Sour, 195
 Sweet, 137
 Gymnocladus, 147
 Gymnopogon, 34
- Habenaria, 89
 blephariglottis, 90
 Canbyi, 90
 ciliaris, 89
 clavellata, 89
 cristata, 89
 fimbriata, 90
 flava, 89
 lacera, 90
 nivea, 89
 peramoena, 90
 psychodes, 90
 tridentata, 89
 Hackberry, 102
 Hackelia, 216
 HAEMODORACEAE, 87
 HALORAGIDACEAE, 187
 HAMAMELIDACEAE, 137
 Hamamelis, 137
Hartmannia, 187
 Haw, Black, 248
 Hawkbit, 280
 Hawk's Beard, 283
 Hawkweed, 284
 Hawthorn, 140
 English, 142
 Hazelnut, 98
 Beaked, 98
 Heath Family, 195
 Heather, Beach, 178
 Pine Barren, 178
 Hedeoma, 223
 Hedge Hyssop, 232
 Mustard, 130
 Nettle, 221
 Helenium, 274
 Heleochloa, 32
 Helianthemum, 178
 Helianthium, 17
 Helianthus, 270
 angustifolius, 270
 annuus, 270
- (Helianthus)
 decapetalus, 271
 divaricatus, 271
 giganteus, 271
 grosseserratus, 271
 strumosus, 271
 tuberosus, 271
 Heliopsis, 269
 Heliotrope, 215
 Seaside, 215
 Wild, 215
 Heliotropium, 215
 Hellebore, False, 82
 Helonias, 81
 Hemerocallis, 83
 Hemianthus, 233
 Hemlock, 11
 Poison, 191
 Water, 191
 Hemp, 103
 Hempweed, Climbing, 255
 Henbane, Black, 229
 Henbit, 221
 Hepatica, 122
 Heracleum, 193
 Herba Impia, 266
 Herb Robert, 162
 Hercules' Club, 188
Herpestis, 232
 Hesperis, 131
 Heteranthera, 77
 Heterotheca, 256
 Heuchera, 136
 Hibiscus, 174
 Hickory, 97
 Bitternut, 97
 Mockernut, 97
 Pignut, 97
 Shellbark, 97
 Hieracium, 284
 Gronovii, 284
 marianum, 284
 paniculatum, 284
 pratense, 284
 scabrum, 284
 venosum, 284
 Himalaya-berry, 144
 Hog Peanut, 159
 Holcus, 29
 Holly, 169
 American, 169
 Hollyhock, 174
 Holosteum, 116

Index

- Honewort, 192
 Honey Locust, 147
 Honeysuckle, 246
 Bush, 246
 Japanese, 246
 Trumpet, 246
 Hop, 103
 Hop Hornbeam, 98
 Hordeum, 26
 Horehound, 220
 Water, 225
 Hornbeam, 98
 Hop, 98
 Horned Rush, 57
 Hornwort, 119
 Horse Balm, 227
 Gentian, 247
 Mint, 222
 Nettle, 227
 Radish, 132
 Horsetail, 9
 Hottonia, 202
 Hound's Tongue, 215
 Houstonia, 245
 Huckleberry, 199
 Black, 200
 Box, 199
 Dwarf, 200
 Hudsonia, 178
 Humulus, 103
 Hybanthus, 179
 Hydrangea, 136
 Wild, 136
 Hydrastis, 124
 HYDROCHARITACEAE, 18
 Hydrocotyle, 190
 HYDROPHYLLACEAE, 214
 Hydrophyllum, 214
 Hyoscyamus, 229
 HYPERICACEAE, 175
 Hypericum, 175
 adpressum, 176
 Ascyron, 175
 boreale, 176
 canadense, 177
 densiflorum, 176
 denticulatum, 176
 Drummondii, 177
 ellipticum, 176
 gentianoides, 177
 gymnanthum, 177
 majus, 177
 mutilum, 176
 (Hypericum)
 perforatum, 175
 petiolatum, 177
 prolificum, 176
 punctatum, 176
 Sarothra, 177
 tubulosum, 177
 virgatum, 176
 virginicum, 177
 Hypochaeris, 280
 Hypoxis, 87
 Hyssop, Giant, 220
 Hedge, 232
 Water, 232
 Hystrix, 26

 Ilex, 169
 glabra, 170
 laevigata, 170
 opaca, 169
 verticillata, 169
 vomitoria, 169
Ilysanthes, 233
 Indian Bean, 240
 Cucumber Root, 85
 Currant, 247
 Pipe, 196
 Plantain, 276, 277
 Rice, 35
 Tobacco, 251
 Turnip, 73
 Indigo, False, 148, 151
 Wild, 148
 Ink Berry, 170
 Inula, 268
 Ipomoea, 211
 Ipomopsis, 214
 IRIDACEAE, 88
 Iris, 88
 Yellow, 88
 Iron-weed, 251
 Ironwood, 98
 ISOËTACEAE, 8
 Isoëtes, 8
 Isotria, 91
 Itea, 136
 Iva, 268
 Ivy, Ground, 220
 Kenilworth, 230
 Poison, 169
 Jack-in-the-Pulpit, 73
 Jacob's Ladder, 214
 Jerusalem Artichoke, 271
 Oak, 110
 Jessamine, Yellow, 205
 Jewel Weed, 171
 Jimson Weed, 229
 Joe-Pye Weed, 252
 Judas Tree, 148
 JUGLANDACEAE, 97
 Juglans, 97
 JUNCACEAE, 78
 Juncus, 78
 acuminatus, 79
 aristulatus, 80
 biflorus, 80
 bufonius, 78
 canadensis, 79
 canadensis, 79
 coriaceus, 78
 debilis, 80
 dichotomus, 78
 effusus, 78
 Elliottii, 80
 Gerardi, 78
 marginatus, 80
 militaris, 79
 nodosus, 79
 pelocarpus, 79
 platyphyllus, 78
 repens, 80
 Roemerianus, 79
 scirpoides, 79
 secundus, 78
 setaceus, 78
 subcaudatus, 79
 tenuis, 78
 Torreyi, 79
 Juniper, 12
 Juniperus, 12
 Jussiaea, 185
 Justicia, 240

 Kalmia, 197
 Kenilworth Ivy, 230
 Kentucky Blue Grass, 21
 Coffee Tree, 147
 Kickxia, 230
 Kidney Bean, 159
 Knapweed, 279
 Knawel, 113
 Knotweed, 106
 Seaside, 106
 Virginia, 109

Index

Kneiffia, 186, 187
Koeleria, 27
Kosteletzkyia, 174
Krigia, 280
Kudzu Vine, 160
Kyllinga, 47

LABIATAE, 218

Lachnanthes, 87

Lactuca, 282

canadensis, 282

floridana, 282

sagittifolia, 282

saligna, 282

Scariola, 282

spicata, 283

villosa, 282

Ladies' Slipper, 88

Large Yellow, 88

Pink, 89

Ladies' Tobacco, 266

Ladies' Tresses, 92

Giant, 92

Nodding, 92

Lady-fern, 4

Lady's Thumb, 108

Lamb's Quarters, 110

Lamium, 221

Laportea, 104

Lappula, 216

Larkspur, 124

Lathyrus, 158

LAURACEAE, 126

Laurel, 197

Great, 197

Mountain, 197

Sheep, 197

Lavender, Sea, 202

Leadwort Family, 202

Leafcup, 268

Leather Flower, 123

Leaf, 198

Leatherwood, 183

Lechea, 178

Leersia, 35

LEGUMINOSAE, 147

Lemna, 74

LEMNACEAE, 74

LENTIBULARIACEAE, 237

Leontodon, 280

Leonurus, 221

Lepidium, 128

Leptandra, 234

Leptochloa, 33

Leptoloma, 36

Lepturus, 27

Lespedeza, 155

acuticarpa, 155

angustifolia, 156

capitata, 156

cuneata, 156

daurica, 156

frutescens, 156

hirta, 156

intermedia, 156

Nuttallii, 155

procumbens, 155

repens, 155

stipulacea, 156

striata, 157

Stuevii, 155

violacea, 155

virginica, 156

Lettuce, 282

Leucocjum, 87

Leucothoe, 198

Liatris, 255

Licorice, Wild, 243

Ligustrum, 205

Lilaeopsis, 193

LILIACEAE, 81

Lilium, 83

Lily, 83

Blackberry, 88

Day, 83

Trout, 83

Turk's-cap, 83

Water, 119

Wild Yellow, 83

Wood, 83

LIMNANTHACEAE, 168

Limnanthemum, 208

Limnobium, 18

Limonium, 202

Limosella, 233

LINACEAE, 160

Linaria, 230

Linaria, 230

Linden, 173

American, 173

Lindera, 126

Lindernia, 233

Linum, 160

Lion's Foot, 283

Liparis, 93

Lip-fern, 3

Lippia, 218

Liquidambar, 137

Liriodendron, 125

Lithospermum, 217

Live Oak, 101

Liverwort, 122

Lizard's Tail, 94

Lobelia, 250

amoena, 250

Boykinii, 251

Canbyi, 251

cardinalis, 250

downy, 250

elongata, 250

Great Blue, 250

inflata, 250

Nuttallii, 251

puberula, 250

siphilitica, 250

spicata, 251

LOBELIACEAE, 250

Locust, 152

Black, 152

Honey, 147

LOGANIACEAE, 205

Lolium, 26

Long Moss, 77

Lonicera, 246

Loosestrife, 184, 202

Bulb-bearing, 203

Purple, 184

Whorled, 203

Lophanthus, 220

Lophiola, 87

Lophotocarpus, 17

Lopseed, 241

LORANTHACEAE, 105

Lorinseria, 3

Lotus, 151

American, 120

Lousewort, 237

Ludwigia, 185

Hairy, 185

Lupine, 149

Lupinus, 149

Luzula, 80

Lychnis, 117

Lycium, 228

LYCOPODIACEAE, 7

Lycopodium, 7

Lycopus, 225

Lygodium, 2

Lyonia, 198

Lysimachia, 202

ciliata, 203

hybrida, 203

Index

- (*Lysimachia*)
lanceolata, 203
Nummularia, 203
producta, 203
quadrifolia, 203
stricta, 203
terrestris, 203
vulgaris, 202
 LYTHRACEAE, 183
Lythrum, 184
- Maclura*, 103
Madder, 242
 Field, 242
Madia, 274
Madwort, 216
Magnolia, 124
 Swamp, 124
 MAGNOLIACEAE, 124
Mahaleb Cherry, 147
Mahogany Family, 163
Maianthemum, 84
Maiden Cane, 43
Malaxis, 93
Mallow, 173, 174
 Curled, 174
 High, 174
 Indian, 173
 Musk, 174
 Rose, 175
 Swamp, 175
Malus, 138
Malva, 174
 MALVACEAE, 173
Manisuris, 47
Man-of-the-Earth, 212
Maple, 170
 Ash-leaved, 171
 Norway, 171
 Red, 171
 Silver, 171
 Sugar, 170
 Swamp, 171
Marginal Shield Fern, 5
Marigold, Marsh, 123
Marjoram, Wild, 223
Marrubium, 220
Marsh Bellflower, 250
 Cress, 131
 Elder, 268
 Fleabane, 266
 Marigold, 123
 Purslane, 185
Matricaria, 275
- Matrimony Vine*, 228
May Apple, 125
Maypops, 183
Meadow Beauty, 184
 Foxtail, 30
 Parsnip, 193
 Rue, Early, 122
 Tall, 122
 Sweet, 137
Mecardonia, 232
Medeola, 85
Medicago, 151
Medick, 151
 Black, 151
Meibomea, 153
Melampyrum, 237
Melanthium, 82
 MELASTOMACEAE, 184
Melia, 163
 MELIACEAE, 163
Melilot, 151
 Yellow, 151
 White, 151
Melilotus, 151
Melissa, 223
 MENISPERMACEAE, 125
Menispermum, 125
Mentha, 226
 aquatica, 226
 arvensis, 226
 gentilis, 226
 longifolia, 226
 piperita, 226
 rotundifolia, 226
 sativa, 226
 spicata, 226
 sylvestris, 226
 viridis, 226
Menyanthes, 208
Mercurialis, 166
Mercury, 166
 Three-seeded, 166
Mermaid Weed, 188
 False, 168
Mertensia, 217
Micranthemum, 233
Microstylis, 93
Mignonette, 134
Mikania, 255
Milk Pea, 160
Milkweed, 209
 Common, 210
 Green, 211
 Orange, 210
- (*Milkweed*)
Poke, 210
 Purple, 210
 Red, 210
 Swamp, 210
 White, 210
 Whorled, 211
Milkwort, 163
 Orange, 165
 Pine Barren, 165
 Sea, 204
 Millet, 42
Mimulus, 231
Mint, 218, 226
 Horse, 222
 Mountain, 223
 Water, 226
 Wild, 226
 Wood, 223
Miscanthus, 45
Mist Flower, 255
Mistletoe, 105
Mitchella, 245
Mitella, 136
Mitrewort, 136
Moccasin Flower, 88, 89
Mock Bishop's-weed,
 191
Modiola, 173
Mollugo, 113
Monarda, 222
Moneywort, 203
Monkey Flower, 231
Monotropa, 196
Moonseed, 125
Morning Glory, 211
 Dwarf, 212
 Ivy-leaved, 212
 Upright, 212
Morus, 103
Motherwort, 221
Mountain Mint, 223
 Rice, 32
Mouse-ear Chickweed,
 116
 Cress, 131
Mud Plantain, 77
Mudwort, 233
Mugwort, Common, 275
 Western, 275
Muhlenbergia, 31
Mulberry, 103
 French, 218
 Paper, 103

Index

- (Mulberry)
 - Red, 103
 - White, 104
- Mullein, 229
 - Moth, 229
 - Pink, 117
 - White, 230
- Muscadine, 173
- Muscari, 84
- Mustard, 130
 - Black, 130
 - Curled, 130
 - Hare's-ear, 130
 - Hedge, 130
 - Indian, 130
 - Tumble, 131
 - White, 130
 - Worm-seed, 131
- Myosotis, 216
- Myrica, 96
- Myrica*, 97
- MYRICACEAE, 96
- Myriophyllum, 187
- Myrtle, 208
- NAJADACEAE, 15
- Najas, 15
- Narthecium, 81
- Nasturtium, 131
- Negundo*, 171
- Nelumbo, 120
- Nepeta, 220
- Nesaea*, 184
- Nettle, 104
 - Dead, 221
 - False, 104
 - Hedge, 221
 - Horse, 227
 - Stinging, 104
 - Wood, 104
- New Jersey Tea, 172
- New York Aster, 263
 - Fern, 6
- Nicandra, 228
- Nicotiana, 229
- Nightshade, 227
 - Enchanter's, 187
- Nimble Will, 31
- Nine-bark, 137
- Nothoscordum, 83
- Nuphar, 119
- NYCTAGINACEAE, 113
- Nymphaea, 119
- Nymphaea*, 119
- NYMPHAEACEAE, 119
- Nymphoides, 208
- Nyssa, 195
- Oak, 100
 - Basket, 100
 - Black, 101
 - Black Jack, 102
 - Chestnut, Dwarf, 100
 - Rock, 101
 - Jerusalem, 110
 - Live, 101
 - Mossy-cup, 100
 - Over-cup, 100
 - Pin, 101
 - Poison, 169
 - Post, 100
 - Red, 101
 - Scarlet, 101
 - Scrub, 101
 - Shingle, 102
 - Spanish, 101
 - Water, 101
 - White, 100
 - Swamp, 100
 - Willow, 102
 - Yellow, 100
- Oakesia*, 82
- Oats, Wild, 28
- Obolaria, 208
- Oenothera, 186
- Oldenlandia, 246
- OLEACEAE, 204
- Olive Family, 204
- ONAGRACEAE, 185
- One-seeded Cucumber, 249
- Onion, 82
- Onoclea, 7
- Onopordum, 279
- Onosmodium, 217
- OPHIOGLOSSACEAE, 1
- Ophioglossum, 1
- Opuntia, 183
- Orach, 111
- Orange Root, 124
- Orchard Grass, 24
- ORCHIDACEAE, 88
- Orchis, 88, 89
 - Bog-rose, 91
 - Crane-fly, 93
 - Crested Yellow, 89
 - Fringeless Purple, 90
 - Green Fringed, 90
- (Orchis)
 - Purple Fringed, 90
 - Rein, 89
 - Showy, 89
 - Small Green, 89
 - Snowy, 89
 - spectabilis, 89
 - tuberclad, 89
 - White Fringed, 90
 - Yellow Fringed, 89
- Origanum, 223
- Ornithogalum, 84
- OROBANCHACEAE, 239
- Orobanche, 240
- Orontium, 74
- Orpine Family, 135
- Oryzopsis, 32
- Osage Orange, 103
- Osmorhiza, 190
- Osmunda, 1
- OSMUNDACEAE, 1
- Ostrya, 98
- OXALIDACEAE, 161
- Oxalis, 161
- Ox-eye, 269
 - Sea, 270
- Oxybaphus, 113
- Oxydendrum, 198
- Oxypolis, 194
- Oyster Plant, 280
- Painted Cup, 236
- Panax, 189
- Panicum, 37
 - aciculare, 38
 - agrostoides, 42
 - albemarlense, 39
 - amarulum, 42
 - amarum, 42
 - anceps, 42
 - angustifolium, 38
 - Ashei*, 41
 - auburne, 39
 - barbulatum, 38
 - Boscii, 41
 - capillare, 41
 - clandestinum, 41
 - columbianum, 40
 - Commonsianum, 39
 - commutatum, 41
 - condensum, 42
 - depauperatum, 37
 - dichotomiflorum, 41
 - dichotomum, 38

Index

- (*Panicum*)
Gattingeri, 41
hemitomon, 43
huachucae, 39
implicatum, 39
lanuginosum, 39
latifolium, 41
Lindheimeri, 39
linearifolium, 37
longifolium, 42
lucidum, 38
mattamuskeetense, 38
meridionale, 39
microcarpon, 38
miliaceum, 42
oligosanthes, 40
oricola, 40
philadelphicum, 41
polyanthes, 40
Ravenelii, 40
rhizomatum, 43
scabriusculum, 40
scoparioides, 39
scoparium, 40
Scribnerianum, 40
sphaerocarpon, 40
spretum, 38
stipitatum, 42
tennesseense, 39
verrucosum, 43
villosissimum, 39
virgatum, 42
Wernerii, 37
Wrightianum, 38
yadkinense, 38
- Pansy, 182
 Field, 182
 Wild, 182
- Papaver, 127
- PAPAVERACEAE, 126
- Papaw, 125
- Paper Mulberry, 103
- Parietaria, 104
- Paronychia, 113
- Parsley, 189
 Fool's, 193
- Parsley Piert, 145
- Parsnip, 193
 Cow, 193
 Meadow, 193
 Water, 192
- Parthenium, 268
- Parthenocissus, 172
- Partridge Berry, 245
 Pea, 148
- Paspalum, 36
- Passiflora, 182
- PASSIFLORACEAE, 182
- Passion Flower, 182
- Pastinaca, 193
- Paulownia, 241
- Pea, Butterfly, 159
 Cow, 159
 Everlasting, 158
 Milk, 160
 Partridge, 148
 Spurred Butterfly, 159
- Peach, 147
- Peanut, 152
 Hog, 159
- Pear, 138
 Prickly, 183
- Pearlwort, 114
- Pearly Everlasting, 267
- Pedicularis, 237
- Pellitory, 104
- Peltandra, 74
- Pencil Flower, 157
- Penny Cress, 128
- Pennyroyal, 223
- Pennywort, 208
 Water, 190
- Penstemon, 231
- Penthorum, 135
- Pentstemon, 231
- Pepperbush, Sweet, 195
- Peppergrass, 128
- Peppermint, 226
- Perilla, 227
- Periwinkle, 208
- Persea, 126
- Persimmon, 204
- Petunia, 229
- Phacelia, 215
- Phalaris, 35
- Phaseolus, 159
- Phegopteris, 2
- Philotria, 17
- Phleum, 31
- Phlox, 213
 Blue, 214
 divaricata, 214
 Downy, 214
 maculata, 213
 Moss, 214
 paniculata, 213
- (Phlox)
 pilosa, 214
 subulata, 214
- Pholius, 27
- Phoradendron, 105
- Phragmites, 24
- Phryma, 241
- PHRYMACEAE, 241
- Phyllanthus, 166
- Physalis, 228
 Alkekengi, 228
 angulata, 228
 heterophylla, 228
 ixocarpa, 228
 lanceolata, 228
 pruinosa, 228
 subglabrata, 228
 virginiana, 228
- Physocarpus, 137
- Physostegia, 221
- Phytolacca, 113
- PHYTOLACCACEAE, 113
- Pickrel Weed, 77
- Picris, 280
- Pigweed, 112
- Pilea, 104
- Pimpernel, 204
 Water, 202
- Pimpinella, 192
- PINACEAE, 10
- Pine, 10
 Loblolly, 10
 Pitch, 10
 Pond, 10
 Scrub, 11
 Shortleaf, 11
 Table Mountain, 10
 White, 10
- Pineapple Family, 77
- Pineapple Weed, 275
- Pine Barren Heather, 178
- Pinesap, 196
- Pineweed, 177
- Pink, 118
 Deptford, 118
 Family, 113
 Fire, 118
 Grass, 91
 Moss, 214
 Mullein, 117
 Sea, 206
 Wild, 117

Index

- Pinus, 10
 echinata, 11
 inops, 11
 pungens, 10
 rigida, 10
 serotina, 10
 Strobilus, 10
 Taeda, 10
 virginiana, 11
 Pinweed, 178
 Beach, 179
 Hairy, 178
 Thyme-leaved, 178
 Pipewort, 75
 Pipsissewa, 195
 Spotted, 195
 Pitcher Plant, 134
 Plane Tree Family, 137
 PLANTAGINACEAE, 241
 Plantago, 241
 arenaria, 242
 aristata, 242
 halophila, 241
 heterophylla, 242
 indica, 242
 lanceolata, 242
 major, 241
 pusilla, 242
 Rugellii, 242
 virginica, 242
 Plantain, 241
 English, 242
 Indian, 276, 277
 Mud, 77
 Rattlesnake, 92
 Robin's, 265
 PLATANACEAE, 137
 Platanus, 137
 Pluchea, 266
 Plum, 146
 Beach, 146
 Bullace, 146
 Chickasaw, 146
 Wild, 147
 PLUMBAGINACEAE, 202
 Poa, 21
 alsodes, 22
 annua, 21
 autumnalis, 22
 brachyphylla, 21
 Chapmaniana, 21
 compressa, 21
 cuspidata, 21
 nemoralis, 22
 (Poa)
 pratensis, 21
 sylvestris, 22
 trivialis, 21
 Podophyllum, 125
 PODOSTEMACEAE, 135
 Podostemum, 135
 Pogonia, 90
 ophioglossoides, 90
 Whorled, 91
 Pogonia, 90, 91
 divaricata, 91
 pendula, 90
 trianthophora, 90
 verticillata, 91
 Poison Hemlock, 191
 Ivy, 169
 Oak, 169
 Poke-weed, 113
 Polanisia, 134
 POLEMONIACEAE, 213
 Polemonium, 214
 Polygala, 163
 ambigua, 165
 cruciata, 164
 Curtissii, 164
 cymosa, 165
 Fringed, 163
 incarnata, 164
 lutea, 165
 mariana, 164
 Nuttallii, 164
 paucifolia, 163
 ramosa, 165
 sanguinea, 164
 Senega, 164
 verticillata, 164
 viridescens, 164
 POLYGALACEAE, 163
 POLYGONACEAE, 105
 Polygonatum, 84
 Polygonella, 109
 Polygonum, 106
 acre, 108
 amphibium, 107
 arifolium, 108
 atlanticum, 107
 aviculare, 106
 aviculare, 106
 Bellardi, 106
 Careyi, 107
 coccineum, 107
 Convolvulus, 108
 cristatum, 109
 (Polygonum)
 cuspidatum, 109
 densiflorum, 107
 dumetorum, 109
 erectum, 106
 glaucum, 106
 hydropiper, 108
 hydropiperoides, 108
 lapathifolium, 107
 longisetum, 108
 maritimum, 106
 Muhlenbergii, 107
 natans, 107
 neglectum, 106
 opelousanum, 108
 orientale, 108
 pensylvanicum, 107
 Persicaria, 108
 prolificum, 106
 punctatum, 108
 punctatum, 108
 ramosissimum, 106
 robustius, 108
 sachalinense, 109
 sagittatum, 108
 scandens, 109
 setaceum, 108
 tenue, 107
 virginianum, 109
 Polymnia, 268
 POLYPODIACEAE, 2
 Polypodium, 2
 Polypody, 2
 Rock, 2
 Tree, 2
 Polypogon, 31
 Polypremum, 205
 Polystichum, 4
 Pondweed, 13
 Horned, 14
 Pontederia, 77
 PONTERIACEAE, 77
 Poor Man's Weather-
 glass, 204
 Poplar, 95, 96
 Poppy, 127
 Horn, 127
 Opium, 127
 Plume, 126
 Prickly, 127
 Populus, 95
 Portulaca, 119
 PORTULACACEAE, 118

Index

Potamogeton, 13
 americanus, 13
 Berchtoldi, 13
 bupleuroides, 13
 capillaceus, 14
 crispus, 13
 diversifolius, 14
 epihydrus, 13
 foliosus, 14
 hybridus, 14
 natans, 13
 nodosus, 13
 pectinatus, 14
 perfoliatus, 13
 pulcher, 13
 pusillus, 13
 Richardsonii, 13
 Robbinsii, 14
 Spirillus, 14
 POTAMOGETONACEAE, 13
 Potato, 227
 Potentilla, 142
 Poverty Grass, 33
 Prenanthes, 283
 alba, 283
 altissima, 283
 autumnalis, 283
 serpentaria, 283
 trifoliolata, 283
 virgata, 283
 Prickly Ash, 163
 Pear, 183
 Poppy, 127
 Pride-of-India, 163
 Primrose, Evening, 186
 Family, 202
 PRIMULACEAE, 202
 Prince's Feather, 108
 Privet, 205
 Proserpinaca, 188
 Prunella, 221
 Prunus, 146
 americana, 147
 angustifolia, 146
 Avium, 147
 Cerasus, 147
 Chicasa, 146
 insititia, 146
 Mahaleb, 147
 maritima, 146
 Padus, 147
 pensylvanica, 146
 serotina, 146
 virginiana, 146

Prunus, 147
 Psedera, 172
 Psilocarya, 53
 Psoralea, 151
 Ptelea, 163
 Pteridium, 3
 Pteris, 3
 Ptilimnium, 191
 Puccinellia, 20
 Pueraria, 160
 Pulse Family, 147
 Pumpkin, 249
 Purpletop, 25
 Purslane, 119
 Common, 119
 Marsh, 185
 Sea, 113
 Putty Root, 93
 Pycnanthemum, 223
 aristatum, 224
 clinopodioides, 223
 flexuosum, 224
 incanum, 224
 muticum, 224
 setosum, 224
 verticillatum, 224
 virginianum, 224
 Pyrola, 195
 Pyrrhopappus, 283
 Pyrus, 138
 Pyrus, 138, 139
 Quaker Ladies, 245
 Quamoclit, 211
 Quassia Family, 163
 Quercus, 100
 alba, 100
 bicolor, 100
 borealis, 101
 coccinea, 101
 falcata, 101
 Fernaldii, 100
 heterophylla, 102
 ilicifolia, 101
 imbricata, 102
 lyrata, 100
 macrocarpa, 100
 marilandica, 102
 Michauxii, 100
 montana, 101
 Muhlenbergii, 100
 nigra, 101
 Otisii, 102
 palustris, 101

(Quercus)
 Phellos, 102
 prinoides, 100
 Prinus, 100
 Prinus, 101
 rubra, 101
 stellata, 100
 subfalcata, 102
 velutina, 101
 virginiana, 101
 Quillwort, 8
 Radicula, 131
 Radish, 129, 130
 Ragweed, 268
 Great, 268
 Low, 269
 Ragwort, 277
 Golden, 277
 Woolly, 277
 RANUNCULACEAE, 120
 Ranunculus, 120
 abortivus, 121
 acris, 122
 ambigens, 120
 bulbosus, 122
 circinatus, 120
 delphinifolius, 120
 flabellaris, 120
 hispidus, 121
 laxicaulis, 121
 longirostris, 120
 oblongifolius, 121
 obtusiusculus, 120
 parviflorus, 122
 pensylvanicus, 121
 pusillus, 121
 recurvatus, 121
 repens, 121
 sceleratus, 121
 septentrionalis, 121
 Raphanus, 129
 Raspberry, 143
 Black, 143
 Purple-flowering, 143
 Rattle Box, 149
 Rattlesnake Plantain,
 92
 Root, 283
 Rattlesnake-weed, 284
 Red Bay, 126
 Bud, 148
 Root, 87
 Top, 30

Index

- Reed, Common, 24
 Giant, 24
 Reseda, 134
 RESEDACEAE, 134
 RHAMNACEAE, 172
 Rhamnus, 172
 Rhexia, 184
 Rhododendron, 196
 arborescens, 196
 atlanticum, 197
 canescens, 197
 maximum, 197
 nudiflorum, 196
 viscosum, 196
 Rhus, 168
 copallina, 169
 glabra, 169
 hirta, 168
 quercifolia, 169
 radicans, 169
 Toxicodendron, 169
 typhina, 168
 venenata, 169
 Vernix, 169
 Rhynchosia, 160
 Rhynchospora, 57
 alba, 58
 axillaris, 59
 capitellata, 58
 cephalantha, 59
 chalarocephala, 58
 corniculata, 57
 cymosa, 57
 filifolia, 58
 fusca, 57
 globularis, 57
 glomerata, 58
 gracilentia, 58
 inexpansa, 57
 inundata, 57
 Knieskernii, 58
 macrostachya, 57
 microcephala, 59
 oligantha, 58
 pallida, 58
 Torreyana, 57
 Ribes, 136
 Rice Cutgrass, 35
 Indian, 35
 Richweed, 104
 Ricinus, 166
 River Weed, 135
 Robinia, 152
 Robin's Plantain, 265
 Rock Cress, 133
 Rocket, 131
 Sea, 129
 Yellow, 132
 Rock-rose, 178
 Rorippa, 131
 Rosa, 145
 carolina, 146
 Eglanteria, 145
 gallica, 146
 humilis, 146
 lucida, 146
 palustris, 146
 rubiginosa, 145
 virginiana, 146
 ROSACEAE, 137
 Rose, 145
 Acacia, 152
 Cotton, 266
 Mallow, 175
 Rose-of-Sharon, 174
 Rotala, 183
 Rottboellia, 47
 RUBIACEAE, 242
 Rubus, 143
 argutus, 144
 cuneifolius, 144
 Enslonii, 144
 flagellaris, 144
 frondosus, 144
 hispidus, 144
 laciniatus, 144
 occidentalis, 143
 odoratus, 143
 ostroyifolius, 144
 phoenicolasius, 143
 procerus, 144
 procumbens, 144
 trivialis, 144
 villosus, 144
 Rudbeckia, 269
 Rue Anemone, 122
 Goat's, 152
 Meadow, 122
 Rue Family, 163
 Ruellia, 241
 Rumex, 105
 Ruppia, 14
 Rush, 78
 Bald, 53
 Beak, 57
 Chair Maker's, 55
 Family, 78
 Horned, 57
 (Rush)
 Nut, 59
 Scouring, 10
 Spike, 50
 Toad, 78
 Twig, 59
 Wood, 80
 Rutabaga, 130
 RUTACEAE, 163
 Sabatia, 206
 angularis, 206
 campanulata, 206
 difformis, 206
 dodecandra, 206
 gracilis, 206
 lanceolata, 206
 stellaris, 206
 Sacciolepis, 43
 Sachaline, 109
 Sage, 222
 Wild, 222
 Sagina, 114
 Sagittaria, 15
 St. Andrew's Cross, 175
 St. John's-wort, 175
 Dwarf, 176
 Great, 175
 Pink, 177
 Shrubby, 176
 St. Peter's-wort, 175
 SALICACEAE, 94
 Salicornia, 111
 Salix, 94
 alba, 94
 babylonica, 94
 Bebbiana, 95
 Caprea, 95
 cordata, 95
 discolor, 95
 fragilis, 94
 humilis, 95
 interior, 94
 longifolia, 94
 longipes, 94
 lucida, 94
 nigra, 94
 purpurea, 95
 rostrata, 95
 sericea, 95
 tristis, 95
 Wardii, 94
 Salsify, 280
 Salsola, 111

Index

- Saltwort, 111
 Salvia, 222
 Sambucus, 248
 Samolus, 202
 Samphire, 111
 Sandalwood Family, 104
 Sand Bur, 44
 Sandwort, 115
 Sanguinaria, 126
 Sanguisorba, 145
 Sanicle, 189
 Sanicula, 189
 SANTALACEAE, 104
 Santa Maria, 268
 SAPINDACEAE, 171
 Saponaria, 118
 Sarracenia, 134
 SARRACENIACEAE, 134
 Sarsaparilla, 189
 Wild, 189
 Sasa, 18
 Sassafras, 126
 Satureja, 223
 SAURURACEAE, 94
 Saururus, 94
 Savory, Summer, 223
 Saxifraga, 135
 SAXIFRAGACEAE, 135
 Saxifrage, 135
 Burnet, 192
 Early, 136
 Golden, 136
 Swamp, 135
 SCHEUCHZERIAACEAE, 15
 SCHIZAEACEAE, 2
 Schwalbea, 237
 Scirpus, 54
 americanus, 55
 atrovirens, 56
 cylindricus, 55
 cyperinus, 56
 debilis, 54
 Eriophorum, 56
 etuberculatus, 55
 expansus, 55
 fluviatilis, 55
 georgianus, 56
 nanus, 51
 novae-angliae, 55
 Olneyi, 55
 planifolius, 54
 polyphyllus, 56
 Purshianus, 54
 robustus, 55
 (Scirpus)
 rubricosus, 56
 Smithii, 55
 subterminalis, 54
 sylvaticus, 55
 validus, 55
 Scleranthus, 113
 Scleria, 59
 Sclerolepis, 252
 Scorpiurus, 153
 Scotch Broom, 149
 Thistle, 279
 Scouring Rush, 10
 Scrophularia, 230
 SCROPHULARIACEAE, 229
 Scutellaria, 219
 elliptica, 219
 epilobiifolia, 219
 galericulata, 219
 integrifolia, 220
 lateriflora, 219
 nervosa, 220
 parvula, 220
 pilosa, 219
 saxatilis, 219
 serrata, 219
 Sea Blite, 111
 Lavender, 202
 Milkwort, 204
 Oats, 24
 Ox-eye, 270
 Pink, 206
 Purslane, 113
 Rocket, 129
 Sedge, 60
 Tussock, 71
 Sedum, 135
 Seed Box, 185
 Selaginella, 8
 SELAGINELLACEAE, 8
 Self Heal, 221
 Seneca Snakeroot, 164
 Senecio, 277
 Senna, 148
 Sensitive Fern, 7
 Plant, Wild, 148
 Sericocarpus, 265
 Service Berry, 139
 Sesuvium, 113
 Setaria, 44
 Shad Bush, 139
 Sheep Laurel, 197
 Sorrel, 106
 Shepherd's Purse, 129
 Sherardia, 242
 Shield Fern, 5
 Marginal, 5
 Shin Leaf, 196
 Showy Orchis, 89
 Sickle-pod, 133
 Sicyos, 249
 Sida, 173
 Silene, 117
 antirrhina, 117
 Armeria, 117
 caroliniana, 117
 conica, 117
 Cucubalus, 118
 dichotoma, 117
 latifolia, 118
 noctiflora, 117
 stellata, 118
 virginica, 118
 SIMARUBACEAE, 163
 Sisymbrium, 130
 Sisymbrium, 131
 Sisyrrinchium, 88
 Sium, 192
 Skeleton-weed, 281
 Skullcap, 219
 Mad-dog, 219
 Skunk Cabbage, 74
 Slender Blue Flag, 88
 Slippery Elm, 102
 Smartweed, 106
 Smilacina, 84
 Smilax, 86
 Bona-nox, 86
 glauca, 86
 herbacea, 86
 hispida, 86
 laurifolia, 86
 Pseudo-China, 86
 pulverulenta, 86
 rotundifolia, 86
 tamnifolia, 86
 Walteri, 86
 Snakeroot, Black, 124
 Button, 189
 Seneca, 164
 Virginia, 105
 Sneezeweed, 274
 Snowberry, 247
 Snowflake, 87
 Soap Berry Family, 171
 Soja Bean, 159
 SOLANACEAE, 227

Index

- Solanum, 227
 - carolinense, 227
 - citrullifolium, 227
 - Dulcamara, 227
 - nigrum, 227
 - rostratum, 227
 - sisymbriifolium, 227
- Solidago, 256
 - altissima, 259
 - arguta, 257
 - bicolor, 257
 - caesia, 256
 - canadensis, 259
 - caroliniana, 260
 - Elliottii, 258
 - erecta, 257
 - fistulosa, 258
 - flexicaulis, 256
 - gigantea, 259
 - graminifolia, 260
 - gymnospermoides, 260
 - hispida, 257
 - juncea, 258
 - latifolia, 256
 - ludoviciana, 257
 - minor, 260
 - neglecta, 258
 - nemoralis, 259
 - odora, 258
 - patula, 257
 - puberula, 257
 - rigida, 259
 - rugosa, 258
 - sempervirens, 257
 - serotina, 259
 - speciosa, 257
 - squarrosa, 256
 - stricta, 257
 - tenuifolia, 260
 - tortifolia, 258
 - ulmifolia, 258
 - uniligulata, 258
- Solomon's Seal, 84
 - False, 84
 - Small, 84
 - Two-leaved, 84
- Sonchus, 280
- Sorghastrum, 47
- Sorghum, 47
- Sorrel, 105
 - Sheep, 106
 - Wood, 161
- Sorrel Tree, 198
- Sour Gum, 195
- Southernwood, 275
- Sow Thistle, 281
- Soy Bean, 159
- Spanish Moss, 77
 - Needles, 273
- SPARGANIACEAE, 12
- Sparganium, 12
- Spartina, 34
- Spatdock, 119
- Spearmint, 226
- Spearwort, 120
 - Water-plantain, 120
- Specularia, 249
- Speedwell, 234
 - Common, 234
 - Corn, 234
 - Purslane, 234
 - Thyme-leaved, 234
- Spergula, 114
- Spergularia, 114
- Sphenopholis, 27
- Sphenopholis, 27
- Spice Bush, 126
- Spider, Flower, 134
- Spiderwort, 76
- Spike-moss, 8
- Spike Rush, 50
- Spikenard, 188
- Spiraea, 137
- Spiranthes, 92
- Spirodela, 74
- Spleenwort, 3
 - Ebony, 4
 - Maidenhair, 4
 - Silvery, 4
- Sporobolus, 32
- Sporobolus, 31
- Spring Beauty, 118
- Spurge, 166
 - Caper, 166
 - Cypress, 167
 - Flowering, 167
 - Petty, 167
 - Seaside, 166
- Spurrey, 114
 - Sand, 114
- Squash, 249
- Squaw-root, 239
- Stachys, 221
- Stagger Bush, 198
- Standing Cypress, 214
- Staphylea, 170
- STAPHYLEACEAE, 170
- Star, Blazing, 81
- Star Flower, 203
- Star Grass, 87
 - of Bethlehem, 84
 - Thistle, 279
- Star-grass, Water, 78
- Steeple Bush, 138
- Steironema, 203
- Stellaria, 115
- Stenophyllus, 53
- Stewartia, 175
- Stickseed, 216
- Stipa, 32
- Stone Root, 227
- Stonecrop, 135
 - Ditch, 135
- Storksbill, 163
- Strawberry, 142
 - Mock, 142
 - Wild, 142
 - Wood, 142
- Strawberry Tomato, 228
 - Tree, 170
- Strophostyles, 159
- Stylosanthes, 157
- STYRACACEAE, 204
- Suaeda, 111
- Sumac, 168
 - Dwarf, 169
 - Poison, 169
 - Smooth, 169
 - Staghorn, 168
 - Swamp, 169
- Summer Savory, 223
- Sundew, 134
- Sundrops, 186
- Sunflower, 270
 - Narrow-leaved, 270
 - Pale-leaved, 271
 - Tall, 271
 - Thin-leaved, 271
- Supple Jack, 172
- Swamp Pink, 81
- Swamp-fern, 5
 - Broad, 5
 - Crested, 5
 - Glandular, 6
- Sweet Bay, 124
 - Cicely, 190
 - Fern, 97
 - Flag, 74
 - Gum, 137
 - Leaf, 204
 - William, Wild, 213
 - Woodruff, 243

Index

- Sweetbrier, 145
 Sycamore, 137
 Symphoricarpos, 247
 Symphytum, 216
 Symplocarpus, 74
 Symplocos, 204
Synosma, 276
 Taenidia, 192
 Talinum, 119
 Tanacetum, 275
 Tansy, 275
 Tape Grass, 17
 Taraxacum, 281
 Tar Weed, 255, 274
 Taxodium, 11
 Tea Family, 175
 New Jersey, 172
 Teaberry, 198
 Tear Thumb, 108
 Teasel, Wild, 249
 Tecoma, 240
 Teesdalia, 128
 Tephrosia, 152
 TERNSTROEMACEAE, 175
 Teucrium, 218
 Thalictrum, 122
 Thaspium, 193
 Thelypteris, 6
 Thistle, 278
 Bull, 278
 Canada, 279
 Field, 278
 Musk, 278
 Pasture, 278
 Plumeless, 278
 Scotch, 279
 Sow, 281
 Spineless, 278
 Star, 279
 Swamp, 278
 Yellow, 278
 Thlaspi, 128
 Thorn, 140
 Cockspur, 140
 Dwarf, 142
 Marshall's, 140
 May, 142
 Washington, 141
 Thorn Apple, 229
 Thorough-wax, 192
 Thoroughwort, 254
 Thyme, 224
 Basil, 223
 (Thyme)
 Garden, 224
 Wild, 224
 THYMELAEACEAE, 183
 Thymus, 224
 Tick Trefoil, 153
 Tickseed, 271
 Tilia, 173
 TILIACEAE, 173
 Tillaea, 135
 Tillandsia, 77
 Timothy, 31
 Tipularia, 93
 Toad Flax, 230
 Bastard, 104
 Tobacco, 229
 Indian, 251
 Ladies', 266
 Tofieldia, 81
 Tomatillo, 228
 Toothache Tree, 163
 Toothwort, 132
 Touch-me-not, 171
 Tovara, 109
 Trachelospermum, 208
 Tradescantia, 76
 Tragiola, 233
 Tragopogon, 280
 Trailing Arbutus, 198
 Tree-of-Heaven, 163
 Trefoil, Bird's-foot, 151
 Shrubby, 163
 Tick, 153
 Trichostema, 219
Tridens, 25
 Trientalis, 203
 Trifolium, 150
 agrarium, 150
 arvense, 150
 carolinianum, 150
 dubium, 150
 hybridum, 150
 incarnatum, 150
 pratense, 150
 procumbens, 150
 procumbens, 150
 repens, 150
 Triglochin, 15
 Trillium, 85
 White, 85
 Triodia, 25
 Triosteum, 247
 Triphora, 92
 Triplasis, 25
 Tripsacum, 47
 Trisetum, 27
 Trumpet Creeper, 240
 Tsuga, 11
 Tulip Tree, 125
 Tumbleweed, 112
 Turkey Beard, 81
 Turnip, 130
 Turtlehead, 231
 Tussock Sedge, 71
 Twayblade, 93
 Twig Rush, 59
 Typha, 12
 TYPHACEAE, 12

 Ulmus, 102
 UMBELLIFERAE, 189
 Uniola, 24
 Upland Boneset, 254
 Urtica, 104
 URTICACEAE, 102
 Utricularia, 237
 biflora, 238
 clandestina, 238
 cleistogama, 239
 cornuta, 239
 fibrosa, 238
 geminiscapa, 238
 gibba, 238
 inflata, 237
 intermedia, 238
 junceae, 239
 macrorrhiza, 238
 purpurea, 238
 radiata, 238
 resupinata, 239
 subulata, 239
 subulata, 239
 virgatula, 239
 vulgaris, 238
 Uvularia, 82

 Vaccinium, 200
 angustifolium, 201
 atrococcum, 201
 caesariense, 201
 corymbosum, 201
 macrocarpon, 201
 neglectum, 201
 pennsylvanicum, 201
 stamineum, 200
 vacillans, 201
 Valerian, 248
 Valeriana, 248

Index

VALERIANACEAE, 248

Valerianella, 248

Vallisneria, 17

VALISNERIACEAE, 17

Venus' Looking-glass,
249

Veratrum, 82

Verbascum, 229

Verbena, 217

angustifolia, 218

Blue, 218

European, 217

hastata, 218

Hoary, 218

officinalis, 217

simplex, 218

stricta, 218

urticaefolia, 217

White, 217

VERBENACEAE, 217

Verbesina, 271

Vernonia, 251

Veronica, 234

americana, 234

arvensis, 234

hederaefolia, 235

officinalis, 234

peregrina, 234

persica, 234

serpyllifolia, 234

Tournefortii, 234

Veronica, 234

Veronicastrum, 234

Vervain, 217

European, 217

Vetch, 157, 158

Viburnum, 247

acerifolium, 247

cassinoides, 248

dentatum, 247

dentatum, 247

nudum, 248

prunifolium, 248

pubescens, 247

Rafinesquianum, 247

recognitum, 247

scabrellum, 247

Vicia, 157

angustifolia, 157

caroliniana, 158

Cracca, 158

dasycarpa, 158

grandiflora, 158

hirsuta, 157

(Vicia)

sativa, 157

tetrasperma, 157

villosa, 158

Vigna, 159

Vinca, 208

Vincetoxicum, 211

Viola, 179

affinis, 179

arvensis, 182

blanda, 181

Brittoniana, 181

conspersa, 182

cucullata, 179

emarginata, 181

eriocarpa, 182

fimbriatula, 180

hirsutula, 180

Kitaibeliana, 182

lanceolata, 181

Muhlenbergii, 182

pallens, 181

palmata, 180

papilionacea, 180

pedata, 179

primulifolia, 181

pubescens, 182

Rafinesquii, 182

rotundifolia, 181

sagittata, 180

scabriuscula, 182

sororia, 180

Stoneana, 180

striata, 182

tricolor, 182

triloba, 180

VIOLACEAE, 179

Violet, 179

Bird-foot, 179

Blue Marsh, 179

Cream, 182

Dame's, 131

Dog, 182

Dog's-tooth, 83

Downy Yellow, 182

Early Yellow, 181

Green, 179

Lance-leaved, 181

Primrose-leaved, 181

Red-stemmed White,
181

Round-leaved, 181

Smooth Yellow, 182

(Violet)

Sweet White, 181

Witmer Stone's, 180

Viper's Bugloss, 217

Virginia Cowslip, 217

Creeper, 172

Snakeroot, 105

Virgin's Bower, 123

VITACEAE, 172

Vitis, 172

Vulpia, 19

Wake Robin, 85

Walking Fern, 4

Walnut, 97

Wartweed, 167

Water Cress, 131

Foxtail, 31

Hemlock, 191

Hemp, 112

Horehound, 225

Hyssop, 232

Lily, 119

Milfoil, 187

Parsnip, 192

Pennywort, 190

Pepper, 108

Pimpernel, 204

Shield, 120

Star-grass, 78

Starwort, 168

Weed, 17

Willow, 184, 240

Water-plantain, 15

Waterleaf, 214

Watermelon, 249

Waterwort, 177

Wax Myrtle, 96

Wedgegrass, 27

Wheat, Cow, 237

White Ash, 204

Cedar, 11

Clover, 150

Elm, 102

Oak, 100

Pine, 10

Walnut, 97

Whitlow Grass, 128

Whitlow-wort, 113

Wild Balsam Apple, 249

Carrot, 194

Coffee, 247

Comfrey, 215

Ginger, 105

Index

- (Wild Balsam Apple)
Licorice, 243
Marjoram, 223
Mint, 226
Pansy, 182
Pink, 117
Plum, 147
Rye, 25
Willow, 94
 Black, 94
 Crack, 94
 Glaucous, 95
 Goat, 95
 Golden, 94
 Prairie, 95
 Purple, 95
 Sand Bar, 94
 Shining, 94
 Silky, 95
 Water, 184, 240
 Weeping, 94
 White, 94
Willow Herb, 186
Wineberry, 143
Winter Cherry, 228
 Cress, 132
Winterberry, 169, 170
Wintergreen, 198
 Chickweed, 203
Wisteria, 152
Witch Hazel, 137
Withe-rod, 248
Wolffia, 74
Wolffiella, 75
Wood Betony, 237
 Mint, 223
 Rush, 80
 Sorrel, 161
Wood-fern, 5
 Evergreen, 5
 Giant, 5
 Toothed, 5
Woodruff, Sweet, 242
Woodsia, 7
Woodwardia, 3
Wool-grass, 56
Wormwood, 275
 Beach, 276
 Roman, 276
Xanthium, 269
Xanthoxalis, 161
Xanthoxylum, 163
Xerophyllum, 81
XYRIDACEAE, 76
Xyris, 76
Yam, Wild, 87
Yarrow, 274
Yaupon, 169
Yellow Foxglove, 235
 Fringed Orchis, 89
 Iris, 88
 Jessamine, 205
 Oak, 100
 Rocket, 132
 Thistle, 278
Yellow-eyed Grass, 76
Yucca, 84
Zannichellia, 14
Zanthoxylum, 163
Zizania, 35
Zizia, 192
Zostera, 15
ZOSTERACEAE, 15
Zygadenus, 82

